NATUR CYMRU
Nature of Wales

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Pembrokeshire Issue

- Heathland beef
- Eira cyntaf Eryri
- Coastal walks
- Damselfly conservation
- Risso's dolphins
- Greater Horseshoe bats
- News, Books, Comment...

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NATUR CYMRU
Nature of Wales

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Natur Cymru is intended to promote the exchange of information about biodiversity and encourage debate. If you have information, ideas for articles or artwork which you think might be of interest to readers, please contact the Editor.

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Llun y clawr/Front cover: Ox-eye Daisies in the Preseli Hills by David Bellamy. David specialises mainly in mountain, desert, Arctic and wild coast scenery. He has written 14 books & produced 7 films on painting. He is concerned about inappropriate developments in the countryside, and the need to conserve our treasured Welsh landscapes. **www.davidbellamy.co.uk**

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NATUR CYMRU GOLYGYDDOL

Mae hi wedi bod yn aeaf cofiadwy – argoel o'r hyn sydd i ddod, efallai. A ninnau'n ymlafnio, yn codi'r gwres canolog ac yn canslo ein teithiau, ar y cyfan mae bywyd gwyllt yn ymdopi'n dda. Yn y blynyddoedd a'r canrifoedd diwethaf, mae ein hanifeiliaid a'n planhigion brodorol wedi goroesi amodau llawer gwaeth. Mae erthygl Les Larsen a Duncan Brown, *Eira cyntaf Eryri*, yn ein hatgoffa o'r tywydd a welir ar ein mynydd uchaf, mae'n esbonio beth yw 'ffenoleg', ac yn nodi pa mor werthfawr yw cofnodion. Braf yw gweld bod prosiect Llên Natur Cymdeithas Edward Llwyd yn ddechrau dwyn ffrwyth.

Yn ôl Pablo Lalor, mae gennym lawer i'w ddysgu am ddolffiniaid Risso. Mae'r diwydiant 'gwyrdd' o wylio dolffiniaid ar gynnydd, ac mae iechyd dolffiniaid yn bwysig iawn iddo. Gall deddfwriaeth newydd – Deddf y Môr a Mynediad i'r Arfordir 2009 – esgor ar gyfnod newydd yn hanes gwarchod y môr; ond, ys dywed Ivor Rees yn *Marine Matters*, bydd unrhyw lwyddiant yn dibynnu ar sut y caiff ei rhoi ar waith.

Sir Benfro yw prif destun y rhifyn yma. Mae Vicky Moller, un o'n cyfranogwyr rheolaidd, wedi sgrifennu cyflwyniad perffaith i'r Sir, felly gwell imi drosglwyddo'r awenau iddi hi.

James Robertson

Sir Benfro – sir ryfedd. Yn llawn gwrthgyferbyniadau. A hithau ag ardaloedd mor dlawd a dirwasgedig, mae'n anodd credu ei bod yn sir gyfoethog y mae pobl yn penderfynu treulio'u hymddeoliad ynddi. Dyma'r unig sir yng Nghymru sydd â dau Aelod Seneddol ceidwadol. Yng Nghynllun Gofodol Cymru, nodir ei bod yn ganolfan bwysig o safbwynt ynni – sef mewnforio tanwydd ffosil ar gyfer Prydain. Yn y sir hon y mae'r boblogaeth o bobl hŷn yn cynyddu gyflymaf trwy Gymru. Yn rhyfeddol, felly, mae hi hefyd yn frith o eco-arloeswyr, ac ynddi hi y bu'r brwydrau caletaf a mwyaf llwyddiannus yn erbyn GM, tanwydd orimwlsiwn a storio tanwydd niwclear. Mae wedi arwain y ffordd wrth newid polisïau yng Nghymru er mwyn gwneud lle i ffyrdd cynaliadwy o fyw mewn cartrefi bach eu heffaith. Ymhellach, ynddi hi y ceir y nifer fwyaf o fusnesau bwydydd organig, marchnadoedd bwydydd lleol, siopau bwydydd cyflawn, stofiau pelenni pren, ffeiriau gwyrdd ac ymarferwyr cyflenwol.

Mae Democratiaeth y Cyngor Sir yn perthyn i'r Oesoedd Canol; ond mae mwy o bobl yn mynychu, yn darllen ac yn gwrando ar orsaf radio'r sir, y papurau lleol a sioe y sir nag unrhyw ardal arall â phoblogaeth debyg. Beth mae hyn yn ei brofi? Fel yr awgryma'r enw, dyma'r brif gymuned neu'r gymuned olaf – Pen + bro, rhywfaint o'r ddau. Mae'n ymylol. Mae ymwelwyr o Loegr yn codi'n sigledig o'u ceir gan ddatgan bod y daith yn ofnadwy o hir. Mae wedi'i hamgylchynu gan fôr a'i gorchuddio gan fryniau, mae ei daeareg a'i phridd yn amrywio o dir amaethyddol gwastad sy'n addas i rawn a thatws i fryniau gwyllt a garw sy'n addas i ddefaid, coed a myfyrdod ysbrydol. Mae ardaloedd diwydiannol a llecynnau bywyd gwyllt o fewn tafliad carreg i'w gilydd.

Y Sir olaf, y brif Sir. Mae yna rywbeth yn y creigiau neu'r aer sy'n ysbrydoli, rhywbeth sydd efallai'n gysylltiedig â'r safleoedd megalithig a derwyddol neu'r brwydrau a ymladdodd y Cymry yn y gorffennol. Yn ystod Terfysg Beca, gwisgai dynion fel merched gan ddinistrio'r tollbyrth a oedd yn faen tramgwydd i'w bywoliaeth; yn eu goresgyniad olaf cafodd y Ffrancwyr eu trechu gan ferched go iawn o Abergwaun; ac yn 1946, llwyddodd offeiriaid a beirdd Cymraeg i arwain ffermwyr a chapelwyr a oedd yn erbyn dadfeddiannu i rwystro Mynyddoedd y Preseli rhag cael eu troi'n faes tanio. Fel y dywedodd John Seymour yn ei gerdd *Strumble Head*, mae'r dirwedd a'n cyndeidiau'n herfeiddiol a llawn dirgelwch, a rhaid inni uniaethu â'u hachos.

Vicky Moller

NATUR CYMRU EDITORIAL

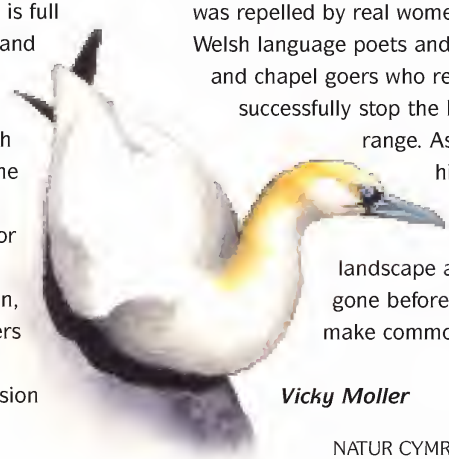
It has been a memorable winter, perhaps a harbinger of winters to come. While we struggle, turning up the central heating and abandoning travel plans, wildlife generally copes remarkably well. Our native flora and fauna have survived much worse in previous years and centuries. Les Larsen and Duncan Brown's article, *Eira cyntaf Eryri*, provides an elegant reminder of the kind of weather which our highest mountain has experienced, what 'phenology' is all about, and how valuable our collective records can be. It is good to see Cymdeithas Edward Llwyd's splendid Llên Natur project is getting into its stride.

There is much to learn about Risso's dolphins, as Pablo Lalor reports. The continued health of dolphin populations is important to the growing 'green' industry of wildlife-watching. New legislation, the Marine and Coastal Access Act 2009, could usher in a new era for conservation at sea, but, as Ivor Rees reports in *Marine Matters*, success will depend on how it is implemented.

Most of this issue is devoted to the County of Pembrokeshire. Regular *Natur Cymru* contributor Vicky Moller has provided a perfect introduction to her County, so at this point I will hand over to Vicky.

James Robertson

Pembrokeshire is a funny county. It is full of contrasts, it has areas so poor and depressed it is hard to believe they are in the affluent county of the retired. It is the only Welsh county with two conservative MPs. It is down on the Wales Spatial Plan as an energy hub, and they mean importing fossil fuels for Britain. It has the fastest ageing population in Wales. Astonishingly then, it also is riddled with feisty eco-pioneers and has had the toughest and most successful battles against GM, Orimulsion and nuclear fuel storage. It has led Welsh policy change to make room for sustainable lifestyles in low impact homes. It also has the most organic food businesses, local food markets, wholefood shops, wood pellet stoves, green fairs and complementary practitioners.



Democracy in the County Council is in the Middle Ages yet the county's radio station, local papers and County Show have higher per head listeners, readership and attendance than any other area of similar population.

So what does all this prove? 'Pembrokeshire' means *head* or *last* community – Pen Bro, it's a bit of both. It is peripheral: visitors from England stagger from their cars saying "That was the mother and father of a journey". It is enveloped in sea and hills, and both its geology and soils are striated with diversity, from flat agricultural land suitable for grain and potatoes to rough wild hills suitable for sheep, trees and spiritual communion. It has industrial zone and wildlife sanctuary in close proximity.

Last County, first County, there is definitely something in the rocks or the air which inspires, perhaps directly linked to the number of megaliths and druidic sites, and to the historic battles for Welsh survival. In the Rebecca Riots, men dressed as women destroyed the toll gates blocking their livelihood; the last attempted invasion by the French was repelled by real women from Fishguard; in 1946 Welsh language poets and clergymen led the farmers and chapel goers who resisted eviction to successfully stop the Preselis becoming a firing range. As John Seymour wrote in his poem *Strumble Head*, there is defiance and mystery here in the landscape and the people who have gone before us, with whom we must make common cause.

Vicky Moller

Mike Howe

Conserving nature

in the Pembrokeshire Coast National Park

Ponies grazing at Cemmaes Head close to two chough nest sites

Pembrokeshire has a coastline of exceptional natural beauty, and has the only National Park in Britain established mainly for its spectacular coast, set up nearly 60 years ago. Nature has influenced culture in this far western land, and has also brought millions of visitors, helping to sustain communities. ***MIKE HOWE*** ***describes how the Park is tackling the job of sustaining nature.***

During the past 15 years there have been a number of national strategies, plans and agri-environment schemes designed to halt and reverse biodiversity loss. Throughout this time the Pembrokeshire Coast National Park Authority (PCNPA) has responded by delivering a flexible, user-friendly scheme, which has grown and transformed into the *Conserving the Park Scheme*. We have also created and co-ordinated the Pembrokeshire Grazing Network, which was the first of its kind in Wales and has greatly influenced the birth of many such schemes around the UK.

The service we provide helps to develop policy and offers advice and information on grants and other assistance available. It gives free help with staff and specialist equipment, capital works such as fencing, water supply and gates, helps to source the right grazing stock and machinery, and generally provides long-term support for practical efforts to conserve our fabulous environment.

Promoting an ecosystem approach to land management

Our protected sites (SSSI, NNR, SAC, SPA network) are absolutely precious and form the backbone of our nature conservation effort. Yet maintaining them in favourable condition is not enough to arrest the massive declines in species populations (eg farmland birds) and habitat loss that we have witnessed in the past 60 years.

It is the way we farm our countryside that holds the key to whether or not we have viable biodiversity in the future. We must start to improve the conditions for wildlife in these areas if we are to develop more ecologically resilient landscapes in Wales.

Many of our lowland habitats were once integral to mixed arable and extensive livestock farming systems. Grasslands, wetlands and heathlands were traditionally grazed, at relatively low intensities, by hardy breeds of sheep, cattle and ponies. However, the specialisation and intensification of agriculture over the last 60 years has resulted in a decline in these mixed, low intensity systems.

It is no longer economic to graze many of our surviving lowland wildlife habitats and they are often isolated fragments. It is increasingly difficult to find livestock to graze remaining wildlife sites. In many cases this has led to a rapid deterioration in their condition. Without appropriate management, scrub and invasive weedy plants often take over, with consequent losses of wildflowers, butterflies, reptiles and other species characteristic of these areas.

Conserving the coastal slopes

For many years the main problems facing Pembrokeshire's coastline have been the two extremes of agricultural intensification on the one hand and neglect on the other. To tackle this problem a local initiative was established to complement the national agri-environment scene and to 'fill the gaps'. *Gwarchod Y Godiroedd - Conserving the Coastal Slopes* was born. This niche scheme exists to tackle the decline of traditional management on Pembrokeshire's clifftops and coastal slopes.

Whatever the obstacles putting off farmers from managing their coastal land, the project was designed to overcome them, be it through advice, grant-aid for site infrastructure, management payments, sourcing suitable grazing animals or free practical assistance. This was provided within a framework which addressed not just biodiversity issues, but also recreation and archaeology.

The scheme received a good response from farmers and resulted in a significant area of land coming back into sustainable management; clifftops and coastal slopes are becoming part of the working farm again. The results are easy to see: dense swathes of bracken and gorse have given way to a patchwork of habitats, and hence more wildlife. In places, coastal fences have been moved further inland to create a wider coastal corridor, bringing recreational and landscape benefits.

Source: Wikimedia Commons

Pentre Ifan portal dolmen

Conserving the Park

Following the success of the coastal slopes scheme the NPA has incorporated the defining elements and broadened the scheme to tackle areas in the whole of the National Park. This project we have broadly named the *Conserving the Park Scheme*, and the services offered now form the core work of the NPA's Conservation Team.

Our aim is to reinstate the network of wildlife-friendly corridors and to manage and enlarge key wildlife habitats. This will give species the chance to establish larger, more sustainable populations, and to create new ones. What we want, therefore, is to optimise conditions for wildlife however, wherever and whenever we can.

At the end of the 3-year European funded scheme in 2002, the PCNPA was actively working on around 50 (mostly privately owned) sites. By 2007 this number had grown to around 90 sites over 1000 hectares of land annually. By 2009 this had increased to 220 sites on 2500 hectares of land annually. The project is ongoing and continues to grow in size.

CC-By-3.0

Allseed *Radiola linoides*

The Conservation Team has two teams of dedicated wardens to do this work. The Woodland Warden team carries out specialist woodland management on the PCNPA owned woodland estate (250 hectares) as well as on sites that are privately owned or owned by partner organisations. The Conservation Warden team carries out specialist habitat management on all the other sites around the Park, again the vast majority of which are privately owned.

St Davids Airfield meadow sequesters large quantities of carbon from the atmosphere and supports 65 breeding territories of skylarks and feeding opportunities for a whole range of other species. It provides an income for the landowner through the organic scheme, grazing and hay making.

Mike Howe

Sustainable products from Cilrhedyn

Mike Howe

Preparing a site for the reintroduction of grazing animals

The secret of our success lies in having a locally administered, non-whole farm agri-environment scheme which can be targeted (unlike national schemes) at specific land in order to achieve specific landscape and biodiversity objectives. Its value has been clearly demonstrated during the past 25 years.

Grazing of semi-natural habitats is often essential to maintain them in good condition. We responded to the problem that appropriate stock were often not available to do the job by instigating and co-ordinating the Pembrokeshire Grazing Network, which is now one of the longest running projects of its type in Wales.

The aim is to facilitate grazing for nature conservation by setting up a system whereby sites/stock available and sites/stock required can be matched up wherever possible. The efforts of conservation organisations and the farming community can therefore be brought together so that stock, sites, equipment and expertise can be shared to mutual benefit.

Woodland management for conservation and timber

PCNPA owns 250 hectares of woodland which is directly managed by the woodland team at the Cilrhedyn Woodland Centre.

The team have been engaged for many years in implementing the site management plans for each woodland (most of which are internationally important sites for conservation – SACs). They use a wide range of skills, from tree felling to tree climbing, and equipment to carry out the work. The team have also been able to provide these skills for private woodland owners on sites that the PNPA does not own or lease.

Cilrhedyn is a facility like no other in Wales. It provides countryside furniture for the National Park's rights of way networks made from locally sourced timber, predominately oak with larch and Douglas fir. Cilrhedyn also sells products such as Pembrokeshire gates to the private sector and provides a saw-milling facility for local woodland owners. We are able to support the timber/woodland industry by developing products and demonstrating good practice.

Evidence for improvement

There are many challenges facing our environment, including our hugely important marine environment, which I have not had the space to discuss. Evidence of environmental improvements depends on monitoring and surveillance, and resources for this across Wales are scarce, and are usually the first things to be cut when finances get tight. This means that we in Wales are in a very poor position to assess our progress against objectives and targets.

The biodiversity monitoring and reporting process is still heavily reliant on volunteers with appropriate skills and knowledge. This is a dwindling resource

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Skylark

and limits our ability to monitor and assess progress. There are also insufficient professional staff to monitor biodiversity and report on progress, particularly for habitats and species in the wider countryside and outside protected sites. Organisations such as NATUR (the Welsh Institute of Countryside and Conservation Management) in Wales are looking to address this issue, but this organisation is also under severe financial pressure.

But there are also encouraging examples of monitoring and surveillance work. Preliminary data from the Pembrokeshire Bird Atlas (which was produced by dedicated volunteers) suggests that whilst many species of birds are continuing to decline on intensively managed highly productive agricultural land, the marginal (semi-natural) land is supporting increasing numbers, due in part to positive management by the PCNPA, CCW, National Trust, MoD, Wildlife Trust etc.

Skylarks are thriving in these areas. The chough population continues to grow steadily as much higher quality feeding habitat is created by traditional grazing and vegetation management on the coastal slopes. Since 1999, when the coastal slopes scheme started, the total number of chough nest sites has risen from 50 to 74 and breeding productivity has increased.

Vegetation structure and habitat diversity on the vast majority of these sites has improved greatly, as has species diversity (particularly plants). Despite this, many species of butterflies, for example, continue to be conspicuous by their absence. Overall, habitats are in much better condition and linkages within and beyond the site boundaries are much improved. The coastal corridor around the Pembrokeshire coast is now an excellent example of a functioning 'green highway'.

The soil carbon content of these habitats is conserved for now and some grasslands, as they increase in species diversity and the organic matter in the soil increases, are sequestering more carbon dioxide from the atmosphere.

The future

It is somewhat ironic that at precisely the moment that the political mindset in Wales has changed for the better in relation to sustainable, conservation land management (as evidenced by the introduction of the Natural Environment Framework, and the new soil-, water- and wildlife-friendly Glastir scheme), we are faced with deep cuts in the public purse.

This means that we are going to have to continue to fight for resources for conservation, and to find new ways of achieving objectives. In a way this is not new, we're used to it. Since its very inception, nature conservation has had to compete for hearts and

minds as well as resources. Nature conservation is a constant battle (usually in the nicest possible sense); it is also all about people management.

Those working in nature conservation have always had to adapt to political, economic and social pressures. In my view the biggest single factor affecting nature conservation over the years has not been development, or economic priorities, it has been apathy. The people who will ultimately decide whether or not we have a vibrant, ecologically rich countryside will not be the conservation managers, it will be the general public, the land owners, and the 'enjoyers' of our countryside. It is they who will either cry out in the face of continued losses of birds and butterflies – things they were used to seeing as children – or they won't, and things will carry on as they are now until the real colour in the countryside is finally washed out.

At least these days nature conservation is establishing a full democratic political mandate. This means that the apathy is lifting, that people are starting, in real numbers, to recognize what has been going on, and are starting to demand action to reverse the declines.

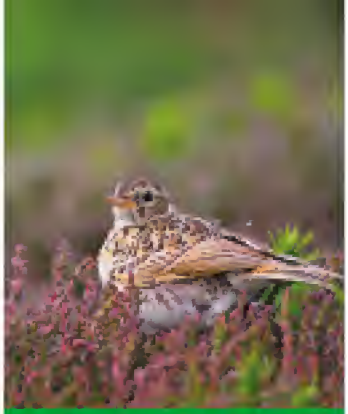
This helps us a lot. It means that even as budgets shrink, new opportunities are arising. We will continue, therefore, to find ways of accessing not just money, but enthusiasm, good will and a common understanding of what is important, and what is not.

***Mike Howe** is Head of Conservation for the Pembrokeshire Coast National Park Authority and a director of NATUR.*

Mike Howe

Rhosfarced Fawr management agreement site – a mosaic of habitats supporting the rare marsh fritillary butterfly.

©RSPB Ben Hall



Parc Cenedlaethol Penfro ar flaen y gâd

Mae Awdurdod Parc Cenedlaethol Penfro wedi ymateb i her cadwraeth mewn sawl ffordd. Sefydlodd gynlluniau blaengar i daclo effeithiau ffermio arddwys a diffyg rheolaeth fel ei gilydd. Nod 'Gwarchod y Godiroedd' oedd adfer rheolaeth draddodiadol ar lethrau môr. Cynigiwyd cyngor, cymorth ymarferol, grantiau a thaliadau rheolaeth. Cystal oedd y canlyniadau, o ran bywyd gwyllt, tirlun, archeoleg a mwynder, fel y penderfynwyd ehangu'r cynllun drwy weddill y Parc. Mae'n llwyddiannus am ei fod yn gynllun lleol, heb fod yn un fferm gyfan, ac mae modd ei dargedu. Mae bodolaeth rhwydwaith pori hefyd yn elfen bwysig. Yng nghoedwig yr Awdurdod yng Ngilrhedyn mae tîm yn creu 'dodrefn' cefn gwlad y Parc, yn gwneud a gwerthu gatiau ac yn cynnal melin lifio at ddefnydd lleol. Annigonol yw'r anoddau ar gyfer gwaith monitro ond dengys y dystiolaeth brin rai canlyniadau calonogol, fel y cynnydd yn niferoedd brain coesgoch o 60 i 74 ers 1999. Tybed a oes arwyddion hefyd bod y llanw'n troi o ran difaterwch y cyhoedd ynglŷn â bywyd gwyllt?

Mike Alexander

The Marloes Peninsula

Marloes sands

Many people cross the finger of land that points to Skomer Island intent on an island experience, unaware of the charms of this peninsula which is itself almost surrounded by sea. Yet there are great walks and lots of wildlife here, thanks to innovative projects by farmers and conservation bodies, as ***MATT SUTTON*** *and* ***ANDREW TUDDENHAM*** *describe.*

Pembrokeshire appears to peter out beyond Marloes, breaking up into a series of islands with Scandinavian names dotted into the Atlantic. Skokholm, Skomer, Midholm, Gateholm and distant Grassholm remind us of past colonisers from Europe.

People continue to be drawn to this end-of-the-world location, seeking wildlife and the amazing views around the Pembrokeshire coast. The islands, cherished by many as the jewels in the crown of the Pembrokeshire Coast National Park, are the prime focus. The breeding colonies of birds on Skomer are of international importance – puffins (the largest colony in Britain), guillemots, razorbills and Manx shearwaters (the largest colony in the world) are all here. Add to this the 50 or so grey seal pups that are born each year and Skomer is a major league wildlife spectacle. Each summer, thousands of visitors make the short crossing from the mainland. Beneath the surface of the water, scuba divers explore the beauty and interest of the underwater world now designated a Marine Nature Reserve (one of only two in Britain) and Special Area of Conservation.

The island has a limited capacity – 250 per day – and not everyone gets lucky with the weather or the queue. But turn inland from the bustling embarkation point at Martin's Haven and you'll find that there are places close by where nature is waiting to be discovered. The Marloes peninsula, most of which is in the care of the National Trust, reveals a fascinating array of wildlife and conservation work.

Deer Park

The Deer Park, the rugged headland that shelters Martin's Haven from the Atlantic swell, takes its name from an abandoned attempt to establish a deer park at the turn of the 20th century. Sheep were more likely to have been contained behind the impressive stone wall that Lord Kensington created in 1847: 'Wooltack Point' juts out into St Brides Bay. Sheep are still here at times, from the neighbouring National Trust Trehill farm, together with cattle and ponies, maintaining a balance between maritime heath and grassland. The central plateau was once so overgrown that only a tractor and flail could break into it, but with the opening up of the vegetation, so came the chough. Two pairs now breed at the Deer Park and others commute from Skomer, foraging in the short turf.

One of the most distinctive plants here is the Prostrate Broom, *Cytisus scoparius ssp maritimus*. Clinging to the cliff edges overlooking Jeffry's Haven, this spineless relative of the gorse looks as if it has been wind-pruned to a low, sprawling mat. This prostrate tendency breeds true though, and the subspecies is a rare cliff edge plant of south-western Britain.

If you've got a good eye, you can see porpoises off the point here. And if you're up here sunset-watching in early summer, look a little further out and there can be thousands of shearwaters drifting back to Skomer for the night. They can come closer after sunset, wheeling over the Deer Park in the dark.

Trehill Farm

The farmland along the south side of the peninsula, stretching from the Deer Park to Marloes Sands, has a long history of agriculture. This continues today with award-winning Pembrokeshire new potatoes and organic Welsh Black beef at the heart of the enterprise. But since 2003, and as reported in previous editions of *Natur Cymru* (12, pp18-22; 25, pp4-8), space has been made for nature in a daring and imaginative project to recreate coastal habitats and put back the historic field pattern that had been lost to intensification. Led by the Countryside Council for Wales and the farmer, the work gained fame for its ambitious scale. Top soil was stripped to re-form hedgebanks and the soil acidified with an application of waste sulphur from the Texaco Oil Refinery at Pembroke. Seed-rich heather brash was spread here and there, and as the sulphur worked its way down through the soil profile in the following years, the heath was able to assert itself and was joined by a few unusual species – Allseed *Radiola linoides*, Portland Spurge *Euphorbia portlandica*, Bristle Bent *Agrostis curtisii* and Lesser Centuary *Centaurium pulchellum* among the surprise arrivals.

Birdlife has flourished, and a coast path walk alongside the project fields will reveal flocks of finches and pipits darting from heather to hedgebank. You get closer to the action when taking the short path inland above Marloes Sands to the Youth Hostel. The ridges and furrows in the heather-flanked coastal field are still flecked with grains of yellow sulphur.

Phil Newman

Nudibranch *Flabellina pedata* - hidden treasures around the coast

Marloes Mere

This shallow wetland is one of the county's better birding spots, and a good place to see waterfowl and raptors in the winter months. It can seem quiet in summer – walking the path that borders the south side of the mere reveals a sea of soft-rush with little more than a moorhen or mallard lurking at the water's edge. But linger a while in one of the hides and birds do reveal themselves – a reed bunting singing from a willow bush, a dabchick on the irrigation pond, or perhaps a marsh harrier sending teal springing from the ditches. A visit during migration periods could reward you with flocks of sand martins dipping and skimming the water, or a handful of black-tailed godwits in fine summer plumage.

Quiet days for birds can be good days for insects, with an interesting dragonfly fauna that includes Ruddy darter, *Sympetrum sanguineum*, Migrant hawker, *Aeshna mixta* and sometimes the rarer Red-veined darter, *Sympetrum fonscolombii*. The mere was once famed for its medicinal leeches, which were exported to London for surgical use. These appear to have died out before the turn of the century, perhaps when cattle stopped being grazed here. The cattle are back now, as part of Trehill Farm's sensitive management, and conservation-grade Welsh black beef is available via the farm's website.

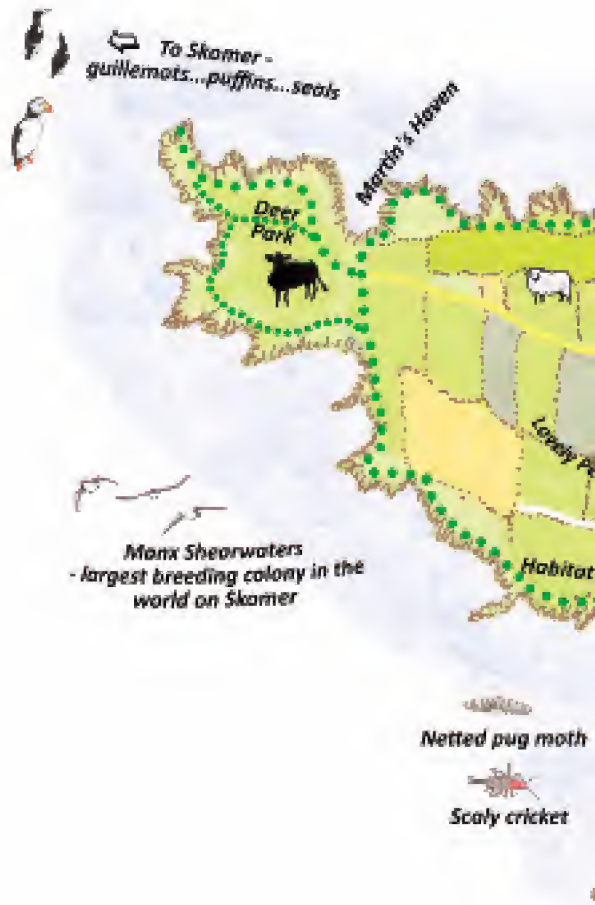
Marloes Sands and coast

Marloes Sands is a mile-long sweep of sand and jagged rock, backed by high, intricately folded cliffs. It is deservedly popular with beach-goers, but in recent years has also been developing a reputation as a haunt for rare wildlife.

The first remarkable find, in 1999, was a population of Scaly crickets *Pseudomogoplistes vicentae*. This rare insect was previously known only from Chesil Beach in Dorset, Branscombe Beach in Devon and the Channel Isles. It seems to live under stones at the top of the beach, moving down the beach as the tide drops to forage amongst the driftline debris.

The following year saw a major botanical discovery on the beach. Stephen and Anne Evans had been searching for Shore dock, *Rumex rupestris*, all around the Pembrokeshire coast, but it wasn't until they visited Marloes Sands that they finally found this rarity. Without a boat, access to the main colony in Watery Bay is a scramble through cliff arches, only possible on the lowest tides. Here, this bright, fleshy dock clings to ledges in the spray zone of a small waterfall. At the other end of the beach, a few plants persist despite being periodically covered by rock-falls.

Where the Atlantic winds allow scrub to develop on the cliffs, wild privet and blackthorn predominate, providing shelter for nesting whitethroats and



stonechats, as well as the occasional wind-blown migrant. The coast path above Marloes Sands is a good place to see oil beetles by day, with their long shiny black bodies and short wing-cases. Walk the cliff path at dusk and you may find glow-worms lighting the way. And with a light of your own, there are good hauls of moths to be trapped, including Netted pug, *Eupithecia venosata*, and the Black-banded *Polymixis xanthomista*.

These rarities may not have the 'wow-factor' of a rare bird or orchid, but they say something about the place – there's something different and unusual about the air, the moisture and the geology. It takes a trained eye to spot them, but they are part of the detail that makes up the fantastic landscape in this remarkable corner of Wales.

***Matt Sutton** has recently left his Senior Conservation Officer post with CCW and is now a self-employed ecologist and farmer. **Andrew Tuddenham** is National Trust Head Ranger for North & Mid Pembrokeshire.*

Trysorau penrhyn Marloes

Ynysoedd hudol Sgogwm a Sgomer sy'n denu'r mwyafrif i benrhyn Marloes. Ond mae llefydd hyfryd eraill i'w mwynhau ar y tir mawr hefyd. Ofer fu'r ymgais i gyflwyno ceirw i'r 'Deer Park' ar droad yr 20fedG, ond mae defaid, gwartheg a merlod bellach yn cynnal tywarchen fer ar gyfer brain coesgoch. Islaw'r llwyfandir mae banhadlen lorweddol brin yn glynu at y clogwyni uwchlaw Jeffry's Haven ac ar y môr bydd llamidyddion ac adar drycin manaw i'w gweld weithiau.

Ar fferm Trehill mae ymgais fentrus i ail-greu cynefinoedd arforol drwy dynnu haeneau uchaf y pridd, chwalu gwastraff sylffwr o burfa olew Texaco i droi'r tir yn asidaidd ac yna taenu torion llystyfiant grugog. Yn araf bach mae gweundir yn ail sefydlu.

Mae pwll bas Cors Marloes, a fu unwaith yn ffynhonnell o elod meddyginaethol, yn denu adar gwlyptir ynghyd â heidiau o wenoliaid y glennydd ac ambell rostog gynffonddu ar adeg mudo. Ar ddiwrnodau llonydd o haf gwelir gweision neidr fel y waëll rudd a'r gwas neidr mudol.

Lle diddorol yw traeth Marloes hefyd. Yn lled ddiweddar canfuwyd y cricsyn cennog dan gerrig ar ran uchaf y traeth a daethpwyd o hyd i dafolen y traeth ar ôl helfa hir o gwmpas glannau Sir Benfro. Uwchlaw'r traeth mae llwyni drain duon ar hyd y llwybr yn gynefin i chwilod olew sgleiniog liw dydd ac i bryfed tân yn y gwyll.

Oliver Yates

The charming Risso's dolphins of the Welsh seas

A pod of Risso's dolphins come up for air as they swim close to shore.

Year after year, the Welsh coast attracts thousands of visitors due to its breath-taking landscapes and diversity of marine life. Cetaceans are a significant attraction for many, who predominantly come in search of the famous bottlenose dolphins of Cardigan Bay. However, the charismatic Risso's dolphin slips by largely unrecognised and undetected for many visitors. Their elusive nature is largely to blame for this, but it is time we began to appreciate these charming animals, writes ***PABLO LALOR****.*

Although Risso's dolphins are little recognised, the inshore waters off Pembrokeshire and the Llŷn Peninsula are significant hot spots for their activity. The dolphins have a distinctive look and, up close, are difficult to confuse with other species of cetaceans if you know what to look for. A sharp, upturned mouth, bulbous head and a large, sickle-shaped dorsal fin are among the key features that distinguish them from other cetaceans found in Welsh waters. Little is known of their abundance in national and international waters: however the waters surrounding the British Isles, in particular Wales and the west coast of Scotland, appear to be visited by groups year-round, and represent an important habitat to the species..

Though not as renowned as other cetaceans such as the bottlenose dolphin or orca (killer whale), one solitary Risso's dolphin from the early 20th century certainly has a claim to fame. Known as Pelorus Jack, he was observed escorting boats across the Cook Strait in New Zealand for over 20 years. Such was Jack's fame that when an assassination attempt on him failed in 1904, Pelorus Jack became what is thought to be the first individual marine animal of any kind to be protected by law in any country. No single dolphin has made such a stir in Welsh waters, but any encounters with Risso's dolphins off the Welsh coastline can provide the visitor with a unique and mesmerising experience.

An image taken from the Photo Identification Catalogue. Notice the prominent scarring patterns used in identifying individual animals.

© Marijke de Boer

What do we know about the Welsh population?

As for any animal that spends most of its life underwater, gathering information about the habits and ecology of Risso's dolphins is far from easy. Although the species is known to be widely distributed internationally and has been sighted in much of the sea surrounding Britain and Ireland, no international or British population estimates exist and population trends are completely unknown. This is vital information. At least a basic knowledge of population trends is essential if progress is to be made when implementing a conservation plan.

©Nicola Hodgins

A majestic leap by a Risso's dolphin captured from a vessel

For some years, the Whale and Dolphin Conservation Society (WDCS) has been working towards a conservation plan for the Risso's dolphins inhabiting Welsh waters. Survey efforts so far have focussed on a combination of visual surveys and a collaborative photo identification project. Visual surveys have been completed using two methods. Firstly, and most simply, land-based visual scans are used. A surprising level of information can be obtained with a keen pair of eyes and good quality binoculars. Repeated, systematic scans from set, high view-points can provide fantastic data on the cetaceans hugging our coastlines. What's more, after a little training, enthusiastic volunteers can be recruited to collect useful scientific information without supervision. More detailed data can be collected by surveying an area using a boat or plane to conduct line-transects. From a vessel, spotters can more easily determine their distance from a sighting and locate cetaceans more precisely. In this manner, the density of cetaceans in the area can be determined and population densities, estimates and eventually trends can be extrapolated.

Photo identification

By nature, Risso's dolphins lend themselves well to photo identification. Part of why they are so striking visually is the extensive scarring to their entire bodies. This is thought to be caused mainly through social activity within the pod. The scars often constitute patterns of two parallel lines which relate to the prominent pair of teeth Risso's dolphins possess, and are probably caused during social interactions. However, it has also been suggested that some scars could be made during feeding on their dominant prey type, squid. As the scars remain visible for a number of years, individuals who are photographed more than once can be easily identified. By sharing their photography catalogues of Risso's dolphins, WDCS and other organisations have

©Pablo Lalor WDCS

The beautiful view from one of the land based observation points overlooking the Bardsey Sound

begun to uncover some interesting observations. A number of individuals photographed off Bardsey Island have been shown to move further north through the year and have also been photographed off the shores of the Isle of Man. Perhaps more interestingly, one individual photographed off Bardsey Island in 2006 by a WDCS researcher, was again photographed some 200 miles south of an island off the coast of Penzance in Cornwall. These observations suggest the possibility of a mobile population that may well range along much of the west coast of England, Wales and possibly even into Scotland.

For nearly ten years now, WDCS has been conducting field research on Risso's dolphins. Support has come from the Countryside Council for Wales (CCW) and more recently, the BBC Wildlife Fund. The focus of the work has been around Bardsey Island and the Lleyn peninsula. The studies are uncovering much needed information about the status and behaviour of the populations that inhabit the waters surrounding Wales and further afield.

Consistent observation of feeding activity around Bardsey has suggested that there are some important habitats for Risso's close to the mainland. St George's Channel, a 50 metre deep contour running across the mouth of Cardigan Bay, may well play a crucial role in this. Areas of upwelling and mixed water currents can result in higher concentrations of favourite prey species. It has been suggested that this is happening along St George's Channel, and that it is this combination of conditions that could make Cardigan Bay such an important site not only for Risso's dolphins, but for all the cetaceans found in Welsh waters. On a more local level, the waters surrounding Bardsey may well be critical habitat for these animals, as they appear to be important nursing grounds. Year on year, nursery groups of mothers and calves have been observed close to the island. Some of these very young calves exhibit foetal folds (prominent light stripes that run along their flanks, indicating that they were recently born), again emphasising the importance of this area for nursing mothers.

Further studies

Risso's dolphins are as understudied as the majority of cetacean species. There is still a wealth of research that is needed to put a full and effective conservation strategy in place. More frequent and detailed periods of research will be taking place, adopting acoustic monitoring techniques in addition to a further expansion of the photo identification catalogue. To plug the gaps in our knowledge, a more detailed understanding of population size, habitat use and seasonal fluctuations in distribution is paramount. From a good platform, an increased knowledge of the sources and importance of long and short term disturbances to the Risso's dolphins can be established, leading to better decision making.

In order to add to the data already gained from the studies based in Wales, WDCS has recently started a similar project based on the Isle of Lewis in Scotland. This will run parallel to the current Welsh study and further broaden our knowledge of this highly mobile species.

Threats to Risso's dolphins

As with other cetacean species, Risso's dolphins face a variety of threats that have manifested in different ways. The impacts of human activity are not as well documented as for other cetaceans. However, there are four main areas of disturbance that can be assumed to be likely threats to the Risso's found in all European seas, including those surrounding Wales.

The degradation of critical marine habitats and

ecosystems due to expanding human developments is a significant threat. Modern marina developments and, perhaps more importantly, the expanding offshore energy industry, may cause serious damage to critical cetacean habitats. Unless robust environmental impact assessments are in place, and suitable mitigations and controls applied, cetacean populations may suffer far larger impacts. In addition, the potential depletion of prey stocks through overfishing, the by-catch of dolphins and porpoises in fishing gear, climate change, and collisions with vessels all pose serious threats. Excessive noise pollution and potential contamination from harmful chemicals are also major issues not to be ignored.

A conservation plan for the future

As the threats to our marine life continue to mount, the challenges to the little understood Risso's dolphin are only going to increase without an appropriate conservation strategy in place. Under the EU Habitats Directive, the UK government is obliged to 'physically protect' all species of cetaceans in UK waters as well as their habitats. WDCS will continue to work closely with CCW and other relevant agencies to implement a suitable conservation strategy that will afford Risso's dolphins proper protection. By association, this will contribute towards the protection of all Welsh cetaceans, though we must be careful not to lose sight of the particular needs of Risso's.

©Nicola Hodgins WDCS

A mother and young calf in the waters surrounding Bardsey Island. The pale stripes along the flank of the calf are foetal folds, only visible in very young dolphins.

Engaging with the local community and instilling a sense of marine stewardship will be key in establishing a secure future for Risso's dolphins in Welsh waters. As WDCS and CCW work towards this goal, a more sensitive ethic towards the environment can be engendered in society. With an appropriate and integrated approach to the conservation of our marine wildlife, we can retain the health of our seas and preserve our stunning marine heritage. What's more, the enigmatic Risso's dolphins will continue to inhabit Welsh waters and provide us with those wonderful wildlife encounters for many years to come.

***Pablo Lalor** is Research Assistant for the Science Team at the Whale and Dolphin Conservation Society.*

Dod i 'nabod dolffiniaid Risso

Hawdd 'nabod dolffin Risso gyda'i asgell grymanog, ei ben bwlyn a'i geg grechwennaidd. Mae moroedd Penfro a Phen Llŷn yn bwysig ar gyfer y rhywogaeth ac mae'r 'Whale and Dolphin Conservation Society' wedi bod yn casglu data sylfaenol am y boblogaeth er mwyn creu cynllun cadwraeth. Cesglir cofnodion, gyda chymorth gwirfoddolwyr, drwy sganio o fannau penodol ar y tir mawr a thrwy ddilyn trawslinau ar y môr mewn cwch neu awyren. Gellir adnabod unigolion o ffotograffau oherwydd y creithiau ar eu cyrff ; crëir rhain gan unigolion eraill yn y pod ac efallai gan fôr-lewys, sef eu hoff brae. Mae arsylwadau'n awgrymu bod y boblogaeth yn symud ar hyd llawer o arfordir gorllewinol Lloegr, Cymru a hyd yn oed yr Alban.

Tybir bod sianel San Sior, sy'n 50m o ddyfnder ac yn gorwedd ar draws ceg bae Ceredigion yn cyfrannu at y tyrfedd a'r cerhyntau sy'n creu'r mannau bwydo pwysig ger y lan ac mae'n amlwg bod dyfroedd Enlli yn lecynnau magu allweddol.

Rhaid dysgu mwy am faint y boblogaeth, ei defnydd o gynefinoedd a'i hamrywiadau tymhorol er mwyn gwneud penderfyniadau call ynglŷn â rheolaeth ein moroedd. Mae sawl ffactor yn peri bygythiad - dirywiad ecosystemau morol, gorbysgota, sgil-lanio dolffiniaid mewn gêr pysgota, newid hinsawdd, ardrawiadau yn erbyn cychod ac efallai sŵn a llygredd cemegol hefyd. Mae deddfwriaeth Ewropeaidd yn gorfodi llywodraeth DU i warchod holl ddolffiniaid y DU, ynghyd â'u cynefinoedd. Mae ennyn cefnogaeth cymunedau yn rhan allweddol o hyn.

Joanna Robertson

©National Trust / Andrew Tuddenham

Heathland beef

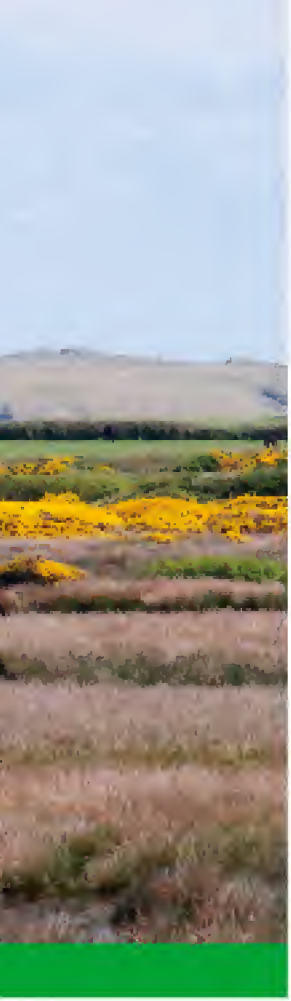
brings heaths alive

The Cig Tir Comin – Pembrokeshire Heathland Beef scheme is providing a new opportunity for farmers and heathland managers in Pembrokeshire to work together. ***ANDREW TUDDENHAM*** *takes up the story.*

Marloes Mere

Last autumn some beef from a group of farmers went on sale in their local independent supermarket store. Shoppers, local restaurants and the media took notice. Just another story of food miles and the local economy? Take a closer look - this was in fact the start of an experiment by the National Trust in Pembrokeshire, one that attempts to reconnect heathland management to production, the latest step for a leading nature conservation project that had started some 20 years earlier.

As featured previously in *Natur Cymru* (6, pp 15-19), Pembrokeshire has its fair share of Wales' lowland and coastal heaths, and since the 1990s we've been working with local farmers to reinstate grazing on them. After all, as well as its great value to nature, this is the vegetation type that gives some of the best known inland and coastal landmarks in the Pembrokeshire Coast National Park their colour and wildness. Some of the largest expanses of coastal heathland in Britain can be found here.



Take a walk around St Davids Head and Carn Llidi, overlooking Whitesands Bay and Ramsey Island, and you'll find exposed seaward slopes covered in classic maritime heath, the gorse and heather cropped short or sculpted into waves by the effects of salt spray and wind. Further inland, the heath is more diverse botanically, with heath bedstraw, heath milkwort, heath spotted orchid and lousewort all present, along with grasses and sedges in the marshy areas. This is also a landscape rich in archaeology, with the remains of enclosures, forts and burial chambers.

Conservation in action

There are many other pieces of heathland in Pembrokeshire, fragments of what was once an extensive network of commons. When they played a central part in the farming system in the 19th and early 20th centuries, these places were used by local people for grazing, the cutting of gorse and the digging of clay. All has changed now - many have become unused and overgrown.

We've needed to be directly involved with livestock to bring derelict heaths back, running a herd of Welsh Black steers and several groups of Welsh Mountain ponies. The Heritage Lottery Funded (HLF) project *Gweundir Byw Sir Benfro – Pembrokeshire's Living Heathlands* covered about 40% of the 2,500 ha of lowland and coastal heath in the county. In their overgrown and run-down condition, many of these heaths weren't an attractive proposition to local farmers. To secure the grazing work, 29ha of scrub and overgrown heath was cut and 22km of boundary fencing and four cattle grids were installed between 1999 and 2006.

As the livestock has restored the condition of these rough areas, the land has become more productive. All this work has helped to convince local farmers to turn out their own cattle. By 2008, when the HLF project and its INTERREG successor project drew to a close, some 650 ha of heathland was receiving positive grazing management. Most importantly there had been a five-fold increase in the intensity of non-National Trust cattle grazing on the HLF project heathlands.

The conservation challenge

There's no room for complacency when dealing with dynamic and shifting ecosystems. The cycle of gorse and heather growth has not been arrested by all that grazing, cutting and burning. The brakes have been applied, but the wheels are still in motion, and where previously a stand of gorse-rich heath could pass from open ground to knee-high thicket within a few years, it now might take seven. The need to intervene from time to time, by cutting and burning, comes round faster if the grazing isn't keeping pace with the season.

Despite the progress, it became clear that there still weren't enough animals grazing the heathlands, and although ponies have a role to play, they aren't necessarily the simplest or best option.

©National Trust / Andrew Tuddenham

Nine Wells valley, part of the Morfa and Trelerw Commons coastal grazing unit, grazed by National Trust Welsh Mountain ponies

Beef is best?

The National Trust commons of Morfa and Trelerw near Solva are part of the vast but simply titled St David's Special Area of Conservation, a European designation that reflects the international importance of the peninsula's cliffland wildlife. The Special Area of Conservation covers most of the coast between Newgale and Pen Beri and contains some of the best examples of western Britain's beautiful coastal heaths and maritime grasslands. Home to unusual plants that include Hairy greenweed, *Genista pilosa* and Chamomile *Chamaemelum nobile*, the cliff land also supports a high density of nesting chough and peregrine falcon.

In the absence of any farmers wanting to use the overgrown land, the National Trust deployed half a dozen Welsh Mountain ponies to graze a 6ha section of Morfa common in the 1990s. Their numbers were increased when the grazing area was expanded by 400% in 2005, covering both areas of common land. Although initial signs were promising, ponies have not proved to be equal to the task.

From experience on other coastal heathland in North Pembrokeshire (at Treseissyllt, St Nicholas and Carnedd Lleithyr, St Davids), cattle at this time provide a more effective grazing service than ponies. Stands of bracken, bramble and gorse present little obstruction to 450kg Welsh Black steers, and the sward is left a little 'shaggier'. From common land records it would not be the first time cattle have used the coast. There is a clear opportunity here to increase the supply of cattle into the *Cig Tir Comin – Pembrokeshire Heathland Beef* scheme. In doing so, we could find a more effective way, financially and ecologically, of grazing Morfa and Trelerw commons. Whether this grazing is provided by local cattle, or by National Trust cattle in the keep of local farms, is now the focus of our work.

At the heart of the matter there is also the thorny issue of sustainability. My back-of-a-beer-mat calculation of the carbon costs of heathland management suggests that our pony grazing operation, reliant on plentiful diesel for the stockman's Land Rover, can be more of an environmental crime than an occasional day spent toiling with heavy plant machinery to manage the vegetation instead. Not a particularly fair comparison – the habitat results for the two options contrast starkly with each other, and much of the coastal terrain is inaccessible to machinery - but the tables are turned when cattle and the production of food are brought into the equation. The trick is to reinstate an economic value to farming on the heaths, finding an additional return for society for all that conservation work. Our inland wet heaths, with their mosaics of marshy grassland in particular, are suited to cattle in summer. There are many schemes

The St David's peninsula, a patchwork of wetland, heathland and farmland

©Sid Howells

Welsh Mountain ponies grazing on the Deer Park, Martin's Haven

©National Trust / Andrew Tuddenham

elsewhere working in this arena, such as Anglesey Wildlife Friendly Produce, launched in August 2010 by the Anglesey Grazing Animals Partnership.

Beef from the heath

We commissioned a feasibility study in 2009 to gauge the demand for locally produced, conservation-derived beef in North Pembrokeshire. The study, conducted by ADAS and funded through the Rural Development Plan's Supply Chain Efficiencies scheme, revealed promising signs. The small group of heathland graziers involved in the study were interested, but the project only found traction with the involvement of Cywain (a Menter a Busnes scheme) and the Agrisgôp programme.

Agrisgôp is an innovative scheme based on the action-learning concept, with the aim of helping farmers to help develop their own businesses. The scheme runs as part of the Welsh Assembly Government Farming Connect programme. Through a series of six evening meetings, the producer group for *Cig Tir Comin – Pembrokeshire Heathland Beef* was born. The group represents a broad range of interests and livestock systems, from a smallholder to a Waitrose producer. The National Trust, with its small herd of Welsh Black cattle, is a member. Herefords, Aberdeen Angus and Dexters are all in the mix. This is not a purely National Trust product, though; none of the farms and not all the heathland involved belongs to the National Trust.

Standards for the scheme came later in the process, as the early Agrisgôp sessions explored the principles of the brand and eased the group into ways of working together towards a shared goal. That goal was to be a trial launch of the product towards the end of the summer, involving a small number of cattle. The process was often great fun, such as the afternoon spent in the company of a professional forager and chef, sampling hedgerow produce in the search for new burger seasonings.

The standards checklist is simple, held together by independent verification and by the trust that operates within the compact producer group: cattle must graze a recognised heathland site, improving its condition for nature; the beef must achieve a specific grade and be hung and dry-aged for a minimum of two weeks; and businesses must meet National Trust environmental standards. An important principle is that the cattle receive a natural diet throughout their life, even when taken from the heathlands to be finished on surrounding pasture.

The St David's store of CK's supermarkets emerged as a potential outlet for the trial. CK's Supermarkets is the largest independent food retailer in south west Wales, with 22 stores in the area. With the expert work of our Agrisgôp facilitator and a receptive in-store butcher, the trial received the support of the company's Managing Director.

Ready for take-off

Simplicity was essential – supplying different parts of a carcass to different outlets could leave some cuts going to waste. The *Cig Tir Comin - Pembrokeshire Heathland Beef* deal was for the whole carcass to be sold to CK's. Their butcher

would then prepare and pack the beef, labelling it with a supplied sticker (simplicity again) and then sell the product according to his requirements.

With promotional leaflets, posters and packaging stickers in the pipeline, funded by Cywain and the National Trust, the final requirement was for an intermediary contractor to fill the gap in the supply chain, between the abattoir and the store. The producer group had no wish to hang and transport the beef themselves. A perfect match was made with Capestone Organics, an award winning poultry supplier near Haverfordwest. This enterprise had cold storage facilities available in summer and could de-bone the carcasses and deliver them to St Davids.

Of course, this is a simple account that conceals an enormous amount of complex liaison and last minute hitches. As the launch neared, the work became fast and exhilarating. Eventually, the trial started in mid September and was launched at the Really Wild Food and Countryside Festival in St Davids, with cooked samples being offered from a stand. By sublime fortune, BBC1 Countryfile were filming a programme around St Davids just before the start of the trial, and with some quick work to take a sample from the maturing beef and package it for the cameras, the brand enjoyed a five minute moment of prime-time exposure.

The results were hugely encouraging. This was a local market that was waiting to be entered. Not only was the concept a hit, but the taste and quality received an enthusiastic welcome from consumers. The natural grass-based diet and dry-aging of the carcass produces beef that has a superior full flavour and is very tender. The economics look good as well – slaughtering and processing contributed an estimated £33,000 to the local economy, and the producers averaged a 10% premium over the conventional market price.

The plan for 2011 is to return with a steady stream of cattle entering the scheme from May to September. The website **www.pembrokeshireheathlandbeef.co.uk** will announce the news. After the last two decades of the National Trust's work on the heaths in north Pembrokeshire, I hope this is just the beginning.

__Andrew Tuddenham__ is the National Trust's Head Ranger for North & Mid Pembrokeshire.

Eidion ac Ecoleg

Mae Sir Benfro'n gartref i rai o'r darnau mwyaf hyfryd a helaeth o weundir tir isel ym Mhrydain. Maen nhw'n cynnal cyfoeth o fywyd gwyllt a llu o olion archeolegol hefyd. Er yn bwysig i systemau amaeth lleol tan ddechrau'r 20fedG mae nifer ohonynt wedi gordyfu bellach. Mae ail-gyflwyno pori yn hanfodol os am sicrhau dyfodol iach iddynt.

Gyda chymorth arian loteri gwnaed llawer o waith i baratoi'r tiroedd hyn ar gyfer stoc ar ddechrau'r ganrif hon. Cliriwyd prysgwydd, gosodwyd gridiau gwartheg a chodwyd ffensys ac erbyn hyn mae pori gweundir yn ddewis mwy atyniadol i ffermwyr lleol. Ond er mwyn cynnal ac ymestyn y diddordeb rhaid ceisio sicrhau budd economaidd i gymdeithas. O ganlyniad i waith ymchwil yn 2009 dysgwyd bod galw am gig eidion 'cadwraethol' yng ngogledd Sir Benfro. Sefydlwyd grŵp cynhyrchwyr *Cig Tir Comin* gyda chymorth Agrisgôp a chytunwyd i dreialu'r cynnyrch erbyn diwedd yr haf. Cafwyd hwyl yn chwilio am fwyd gwyllt yn y cloddiau i roi blas gwahanol a newydd yn y byrgers ond roedd agweddau difrifol i'r gwaith hefyd, fel gosod safonau. Mae'r rhain yn syml ; rhaid pori gweundir, ei wella ar gyfer bywyd gwyllt, rhaid i'r eidion gyrraedd safon arbennig a bod ar y bach yn sychu am leiafswm o bythefnos a rhaid cyrraedd safonau amgylcheddol yr Ymddiriedolaeth Genedlaethol. Rhaid i'r gwartheg gael bwyd naturiol drwy eu hoes, hyd yn oed wrth gael eu pesgu ar borfeydd cyfagos. Gweithodd y cynhyrchwyr gyda phartneriaid eraill er mwyn sicrhau proses gyflenwi hwylus a olygai nad oedd angen iddynt storio, trafod a chludo'r cig. Croesawyd y cynnyrch – ac mae'r canlyniadau economaidd yn dda hefyd. Amcanwyd bod y lladd a'r prosesu wedi cyfrannu £33k i'r economi leol ac mae'r cynhyrchwyr wedi cael, ar gyfartaledd, 10% yn fwy am eu cig eidion.

Mike Alexander

Springtime on the Pembrokeshire Coast

Guillemots on Stack Rocks

*To breathe in the ozone-filled atmosphere of Pembrokeshire's stunning coast, and encounter its exuberant wildlife, you need to get your walking boots on. Two experienced boot-wearers, **DAVID** and **MORAG PERROTT**, take us on a tour of some favourite walks along the coastal path from its start at Poppit Sands near Cardigan in the north to the edge of Tenby in the south.*

I must start with a confession. I haven't walked the whole of the Pembrokeshire Coast. Over recent years my wife Morag and I have dipped into it extensively with a series of circular walks where paths make this possible. So while we've no doubt missed some fine sections, as a bonus we've been exploring remote inland countryside, wooded valleys, gardens open to the public, cromlechs and stones – and made use of the excellent coastal bus services – something we might never have accomplished if we'd just walked around the edge!

Poppit Sands to St David's Head

The first mile or so of the Coast Path climbs away from Poppit Sands along a minor road which serves just a few houses and a camp site. After a very short while you are able to look over the Teifi estuary, the sands and Cardigan Island. Still climbing you turn left at Cemmaes Head and continue to the highest point on the whole path at Pen yr Afr. Having got those 175 metres under your belt you deserve a rest. It's time to stop and savour the view – looking north across Cardigan Bay,

Mike Alexander

on a clear day, you can see the Llŷn, like a dragon's back, stretching west to Bardsey. Turning to the south-west, Strumble Head marks the limit of the visible coast. Beneath you the gulls are wheeling and swooping. In the bay an inshore fishing boat, looking like a toy, leaves its sparkling wake across a clear blue sea. It's springtime in Pembrokeshire...

The ancient rocks of the cliffs are spectacularly buckled, revealing their complex geology, and as you head west the path becomes increasingly remote before it descends to Newport Sands. From a path across the dunes and the golf course you may see bee orchids in early summer. The estuary of the Afon Nyfer at Newport supports a large and very diverse bird population on its mudflats and saltmarshes. The Iron Bridge over the river is a popular viewing point, and from here you may see resident grey heron, little egret, oystercatcher and kingfisher – and ringed plover, curlew, whimbrel and many others during the spring.

Further to the west, a circuit of Dinas Island is worth completing. It's an island only in name, being attached to the mainland by a valley scoured by the same Ice Age melt-water which formed the magical Gwaun Valley. From the path circumnavigating the island you will see a flush a bluebells in the spring, along with heather, ling, thrift and perhaps the odd orchid. Needle Rock, on the eastern side, is the place to see fulmar, guillemot, razorbill and shag, and perhaps a chough if you visit in wintertime. The route between Pwllgwaelod and Cwm yr Eglwys has been surfaced, making it easily accessible for

wheelchair users. When you have completed your circuit, The Old Sailors pub at Pwllgwaelod makes a great place to rest and perhaps enjoy a meal and some real ale. From the garden here we have watched porpoises playing just offshore.

Should the opportunity arise, an excursion away from the coast to the Gwaun Valley comes highly recommended. Here you can walk in the midst of an ancient oak and beech forest, hidden within which there is a population of dormice. On the 13th of January each year locals celebrate Hen Galan, New Year's day according to the old Julian calendar, at The Dyffryn Arms. Run by the landlady Bessie and her family, and virtually unchanged for 90 years, it's a unique survival.

A bracing walk from Pwllgwaelod brings you to Lower Town, Fishguard – the coast road, low cliffs and narrow estuary have all combined to preserve it from development, although it's a great pity there isn't a café by the quayside. This little harbour was transformed into 'Llareggub' for the film of Dylan Thomas' 'Under Milk Wood', made here in 1972 starring Elizabeth Taylor and Richard Burton. West of the ferry port of Fishguard, and 175 years earlier, at Carregwasted Point, a French fleet invaded the British Isles. I probably don't need to tell you it wasn't successful – indeed it degenerated into something of a farce. The subsequent peace treaty was signed on a table preserved at The Royal Oak in Market Square, Fishguard. A memorial above Aber Felin, where seals bask, commemorates the abortive landing.

Stackpole Head

Wood sorrel

A favourite haunt of ours, travelling west, is the little village of Porthgain. Slate and road stone were once extracted and shipped out from the harbour here by a fleet of steamers, a trade which reached its heyday around 1910 but was brought to an abrupt halt by the great war and the U-boat threat. Once linked to Abereiddy by a tramway, what was once a place of noise, smoke and dust is now a pristine gem of industrial archaeology. The Coast Path, which drops into the east of the bay and leaves to the west up steep steps by the harbour wall, passes above Traeth Llyfn – a beautiful beach reached by steps down the cliff – to eventually reach The Blue Lagoon, a deep slate quarry now open to the sea and popular with canoeists.

St David's Head now beckons, offering your first view of Ramsey Island from a landscape of ancient field systems, burial chambers, forts and cairns by the cathedral city of St David's.

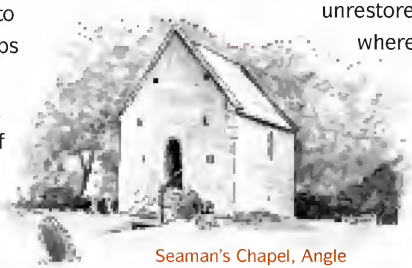
St David's to Milford Haven

From St Justinian's, a couple of miles west of St David's, you can take a summer boat trip around Ramsey Island to see the sea caves, and if you are lucky, seals and porpoises. The adventurous can book an inflatable boat ride (May to August) to Grassholm or the Bishops and Clerks islands, to watch shearwater, puffin and gannet, and a variety of whale species. South of St David's and just off the Coast Path is St Non's Well, one of Wales' most sacred sites, reputed to have sprung from the ground at the birth of St David. His religious teacher was St Elvis, and you can walk to his cromlech, by a farm of the same name, on a path from the excellent Harbour Inn at Solva.

We've never walked the whole of St Brides Bay, but I'm told by a good friend that a visit to the cliffs and stacks of Haroldston Chins, bedecked with flowers in the spring, will never disappoint. Around the corner is Dale and Milford Haven, where this sublime coast rubs sometimes uneasy shoulders with the oil and gas industry. It provides work and income for many, and we are grateful for that, but it is sometimes to the detriment of the environment. Tankers may be seen either entering or leaving the Haven, or discharging their cargoes at one of the vast jetties. Follow the Daugleddau east and you'll reach the old port of Lawrenny, where limestone was once exported. You will find it hard to believe you have only just passed the sprawling installations of the oil and gas industry. Here there is sublime ancient oak and beech woodland by the banks of this tidal river, and you can take the easy walk we have suggested, and visit the medieval church of St Caradoc, one of county's finest. In the woodland you could expect to see nuthatch and chiffchaff, and if you visit early in the year you'll find curlew, redshank and dunlin, along with various waders, feeding on the mudflats. For the very lucky, perhaps an otter will make an appearance.

Milford Haven to Tenby

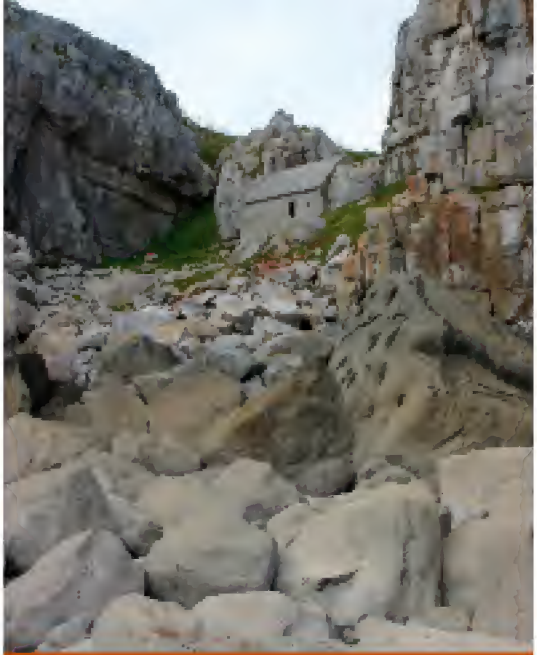
A place we enjoy visiting, on the eastern side of the Haven's mouth, is Angle, which feels slightly other-worldly at the end of the road west from Pembroke. The sea and mudflats are omni-present around a village which has no less than 25 listed buildings, including the Seaman's Chapel and a splendid and unrestored 14th century tower house, where you can climb the stair-turret to the top for a stunning view of Angle Bay.



Seaman's Chapel, Angle

The army's training grounds and ranges now occupy a large chunk of land stretching as far as

The Blue Lagoon



St Govan's Chapel

Bosherston, although at certain times you can gain access to Elegug Stacks and The Green Bridge of Wales, a gigantic natural carboniferous limestone arch. Bosherston Lily Ponds are another wildlife sanctuary, created for the Stackpole Estate between 1780 and 1860 by blocking and flooding three narrow valleys. They provide a stunning display of water lilies in summer, plus an excellent opportunity to see otters, along with a variety of waterfowl. Follow the road south from here, descend 75 steps into a rocky cove and you can visit St Govan's Chapel. To the east is Manorbier and the outliers of the walled town of Tenby, thought by many to be one of Britain's most pleasing coastal resorts, and the perfect end to this springtime tour.

David and Morag Perrott *are the founders of Kittiwake Books, a range of walking guides which now cover virtually all parts of Wales and the borders. The full range, including a Pembrokeshire guide and another for the Coast Path specifically for the disabled, can be seen and ordered at:* ***www.kittiwake-books.com****. Based near Machynlleth in Mid-Wales, they also work on many local projects, and David has written the National Trail Guide to Glyndŵr's Way.*

Rhamant y crwydro

Bydd pawb a gerddodd y cyfan, neu rannau o lwybr arfordir sir Benfro yn cofio'n eglur eu darnau arbennig hwy. Rhwng Llandudoch a Phenrhyn Dewi efallai mai gweld bryniau Llŷn yn ymestyn fel asgwrn cefn ar hyd y gorwel fydd wedi eich taro. Neu ddaeareg chwil y clogwyni, neu'r adar ar afon Nyfer. A phwy all anghofio'r sioe o flodau gwyllt - y carpedi o glychau'r gog a chlustog Fair ar Ben Dinas neu'r grug a'r tegeirianau yn yr haf.

Mae olion hanesyddol amlwg mewn llefydd fel Porthgain, sy'n hen bentref chwarelyddol. Glaniodd y Ffrancod ger Wdig yn y 19egG ac yn hanner olaf yr 20fedG ffilmiwyd 'Dan y Wenallt' yn Abergwaun. Llawer hŷn yw cromlechi a ffynhonnau ardal Tyddewi. Gwelir ynysoedd trawiadol, a'u llond o fywyd gwyllt, o'r llwybr rhwng Tyddewi ac Aberdaugleddau.

Mae tirlun diwydiannol cyfoes Aberdaugleddau yn sioc i'r system. Buan mae hwn yn diflannu wrth i'r afon Cleddau ystumio at y tir drwy dirwedd fwyn o gaeau a choetiroedd sy'n lapio o gylch ymylon yr aber ac yn cuddio hen chwareli calchfaen.

Teimlad anghysbell, a llu o adeiladau cofrestredig, sy'n nodweddu pentref Angle, rhwng Aberdaugleddau a Dinbych y Pysgod. Mae presenoldeb milwrol helaeth yn yr ardal hon. Mae'r maes tanio'n bwysig ar gyfer byd natur ond efallai mai golygfeydd fel staciau Elegug a llynnoedd trawiadol, annaturiol Bosherston sy'n aros yn y cof. Mae'r gwanwyn yn adeg wych i grwydro - ond mae pob tymor yn llawn trysorau yn Sir Benfro.

On soft ground

damselfly conservation in Pembrokeshire

Southern damselfly *Coenagrion mercuriale* (male)

In the past, Pembrokeshire's damselflies could rely on the incidental results of human activities, whether farming or clay-winning, to create their ideal habitat. These days their habitat is being revived in a more deliberate way, as MATT SUTTON reports

"John Sticks would be cursing me if he was stood here now....". Eric Johns was grappling with the concept of biodiversity conservation as he watched the JCB casually tossing spoil back into the ditches that the pair of them had carved out below the spring-line one summer in the 1970s. Even this wetland in the peat-filled valley above Mynachlog-ddu could be made to grow crops by a hard-working farmer like Eric. He'd had a tidy enough crop of corn from a patch by the river many years ago, before the soft-rush had reclaimed the ground. I wheeled out the usual conservation mantras – how important peat was for soaking up water, soaking up carbon, and how rare and special this little blue insect – the Southern damselfly – is. But as it started raining again, I had to acknowledge that making this ground still wetter than it already was did seem like a slightly odd thing to be doing. Eric – the youngest of eight – was born and brought up on this small farm, squeezed between bog and hill. There didn't seem any obvious reason why he should care much about damselflies or climate change. Action plans and the workings of strange conservation bodies must seem as remote to

him as the hill farms do to the Assembly Government. He didn't expect to be seeing the results of our morning's work, and there was no one else in the family who'd take over the farm. Still, the few hundred pounds of grant money would help with the heating bill this winter.

I visited Eric's neighbours, Doug and Viv Lockton, later that day. Initially wary of the SSSI designation, they had subsequently warmed to their role as custodians of this special wetland. Grant money helps in this respect, but only if it comes with a mutual understanding of the challenges and a pragmatic approach. The springs and runnels were in need of trampling to keep them open for the southern damselfly, but Doug was adamant he didn't want cattle again – what with passports, paperwork, TB and winter feed costs. In the end we'd agreed that he'd keep a few ponies down there and do some extra trampling himself. He'd also agreed to have a ditch re-directed out into the field again, to recreate a constantly flowing flush system.

I'd come today to see how it was all working. We stomped up and down the old flushes, bringing peaty water oozing over the surface. We had no pantomime cow outfit to don for the job, but Doug entertained me by describing how the damselfly monitoring people had visited a few weeks ago – all the way from England – to find it as dull and wet as today. "They should have come the week before" he said, "the air was blue with them". His cheerful report, together with the sedges and mosses now proliferating in the new flushes, was enough to tell me that 'favourable conservation status' was probably being maintained. Look up Dolau Isaf B&B if you want to stay there and see for yourself.

Drainage goes into reverse

It was a brighter day when the Hymac arrived at the Clarkes' farm near Martletwy. Terry and Mary have embraced biodiversity conservation, slotting it in alongside their productive dairy. They're not just milking it for the financial rewards and awards it can bring, but have developed a keen interest in the wildlife arriving on the new ponds and wetlands. The

Matt Sutton

Doug Lockton

fertiliser arrived at the same time, along with a bill to the tune of £8,500. The conservation work we had planned for this year meant that there would be one less hungry field of rye-grass to eat this. The five acres alongside the SSSI had been wet grassland until the late 1990s, when it was finally drained and ploughed. Now, in a valiant but perhaps futile effort to stop the marsh fritillary butterfly disappearing from these parts, it was to be wet grassland again. The same contractor who had installed the drainage pipe was coming to remove it. His philosophy was simple – the more times government policy or society changes its mind, the more work he gets out of it. "Another ten years and you'll be putting a pipe back in again". He may well be right – this new kind of conservation is expected to fit into ten-year agri-environment scheme cycles, rather than the millenial cycles that should govern our wild places.

Still, we set about pulling out the pipe and the groundwater was soon pooling on the surface of clay. Little direction was needed from me – people who understand how to drain fields understand equally well how to un-drain them. Only the farmers' inclina-

Small Red damselfly *Ceriagron tenellum* (male)

tion towards straight lines and a tidy finish needs to be countered here. By the end of the day, the new spring was brimful and a large shallow pool was spilling out from the ditch on the edge of the field. Other new ponds on the farm have quickly been colonised by the Scarce Blue-tailed damselfly, and this one too looks set to get instant results. Given time and gentle management, the rest of the field may become purple-moor grass pasture full of orchids and Marsh Fritillaries like the old land next door, but that vision demands a good deal more faith.

Clay pits

Later in the week I'm up around St David's with an hour to kill, so I take a look at the dozen rough pools I'd had dug on Trefeiddan Moor five years ago. I remembered a commoner describing to me how his dad had won clay from the old pits here, the depth being determined by how far he could go down and still pass a full bucket back up. The clay was mixed with coal dust – culm – to make the slow-burning fuel that many people heated their homes with. Such activities kept open water in the centre of the pool, home to a host of rare plants and insects including Floating Water plantain and Small Red damselflies. The moor is still pockmarked with these pits, but they are now rafted over with bogbean and bottle sedge, and most of the rarities seem to have gone. As conservationists we try to hold on to or recover these specialists, even if their chosen niche is out of step with the times. With culm long since consigned to the history books, the modern way had to be a day's hire of a tracked machine.

I had been keen to try to find a use for the stuff we were digging out, and had lined up a tractor and trailer and a neighbouring landowner willing to experiment with the decaying vegetation as organic mulch. But after a night of heavy rain had brought the long dry spell to an end, it was clear that this wasn't a place for agricultural machinery. We discreetely banked the spoil up or piled it into willow copses. Now, with the new pools broken in by the passage of time and the water buffalo from an adjoining farm, they were playing host to some of the clay pit specialists again. Stoneworts proliferated in the shallow, sunlit water; I flushed a pair of garganey from among the horsetails, and a male Small Red damselfly held territory from a cotton grass stem. A stay of execution perhaps, but who knows how the next pools will be fashioned here?

Matt Sutton *has recently left his Senior Conservation Officer post with CCW and is now a self-employed ecologist and farmer.*

Gwlyb a gwyllt

Mewn gwahanol gorneli o Sir Benfro mae ymdrechion ar y gweill i ail-greu tir gwlyb ar gyfer rhai o greaduriaid a phlanhigion hyfrytaf a phrinnaf Cymru. Ym Mynachlog-ddu ac ym Martletwy mae gwaith draenio'r gorffennol wedi ei ddad-wneud a chreaduriaid trwm yn cael stompio a stwnshio'r tir i greu cynefin addas ar gyfer rhywogaethau fel mursen las Penfro a'r fursen dinlas. Er yn amheus ar y cychwyn o'r dynodiad a roddwyd ar eu tir oherwydd y bywyd gwyllt arbennig mae nifer o berchnogion wedi bod yn fodlon cydweithio ac yn wir wedi dechrau ymfalchïo yn llwyddiant y gwaith wrth weld byd natur yn dychwelyd. Gwenu, wrth gwrs, mae contractwyr JCB sy'n cael eu talu eto am ddad-wneud y gwaith a wnaethpwyd ganddynt flynyddoedd yn ôl!

Ac ar dir comin Trefeiddan, ger Tyddewi, mae pyllau a gloddiwyd bum mlynedd yn ôl bellach yn gynefin i rawn yr ebol a'r fursen fach goch – rhywogaethau nodweddiadol hen byllau lle cloddwyd clai er mwyn ei gymysgu'n bellenni gyda llwch glo i greu tanwydd rhad. Llanw a thrai yw hanes cadwraeth ym mhob man – ond mae'r cynefinoedd gwlyb hyn yn ddiogel – o leiaf am am sbel fach eto.

Dewi Edwards

Eira cyntaf ac olaf Eryri 1941-2010

Nod Project Llên Natur Cymdeithas Edward Llwyd yw casglu a rhannu gwybodaeth am y berthynas rhwng pobl a'r amgylchedd naturiol o'u cwmpas. Ar wefan Llên Natur (www.llennatur.com) cewch lawrlwytho o, neu ychwanegu at, 35,000 o gofnodion allan o ddyddiaduron, yn ymestyn dros y ddwy ganrif a hanner a mwy ddiwethaf. Maent yn ymwneud yn bennaf â'r tywydd, amaethyddiaeth a'r amgylchedd. Ymysg y cofnodion hyn mae cyfraniadau gan bobl fu'n cadw cofnodion preifat ac sydd yn fodlon rhannu eu data â'r Prosiect. ***LES LARSEN****, un o'r cofnodwyr dyfal hyn a* ***DUNCAN BROWN****, cydlynydd Prosiect Llên Natur, sy'n sôn am gofnodion eira dros y 70 mlynedd diwethaf.*

Eira cynnar ar y Cnicht 8 Rhagfyr 2010. Er cynhared yr eira hwn, ar yr 8ed o fis Tachwedd y cofnododd, LL ei eira cyntaf y flwyddyn hon yn Eryri.

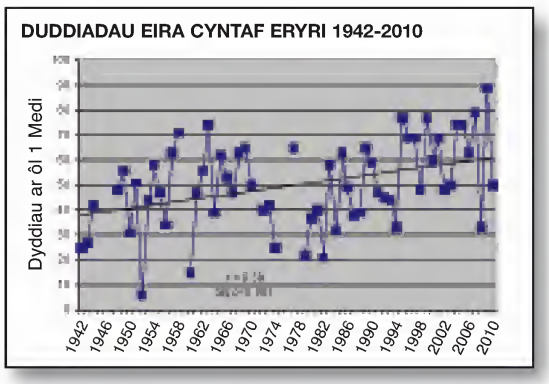
Yn y gyfrol boblogaidd "The Wrong Kind of Snow" ysgrifennodd yr awduron am gofnod yn nyddiadur Robert Marsham o Norfolk: "This spring day [10 Ebrill] of 1736 the first swallow arrives at Stratton Strawless, Norfolk. It's noteworthy only because of what Robert Marsham does next. He writes the fact down. No-one has ever thought of doing such a thing. The science of phenology is born." Cafodd Les Larsen ei "Marsham Moment" yn 1941!

Bu Les Larsen (LL) yn cofnodi'r tywydd o'i gartref ym Mhenisarwaun, ger Caernarfon, ers 1941. Cofnodion syml ydynt o ddyddiadau'r eira cyntaf ac olaf ar fynyddoedd Eryri a gasglodd trwy ffenestr ei gegin neu trwy grwydro ei filltir sgwar. Mae'r data yn cofnodi yr hyn a welodd bob blwyddyn, bron yn ddi-fwlch dros gyfnod o 71 o flynyddoedd. Ym marn yr ail awdur (DB) mae'r cofnodion hyn, er mor syml, yn bwysig a gwerthfawr am eu bod yn rhoi inni rediad gweddol hir o ddata all gyfrannu i'n dealltwriaeth o'r byd o'n cwmpas yn enwedig yn y cyfnod ansefydlog a chyfnewdiol yr ydym ynddo ar hyn o bryd. Maent yn dangos hefyd fod yna werth mewn cofnodi ac mewn dyfalbarhad – er mai prin oedd LL yn ymwybodol o beth yn union fyddai eu ddefnyddioldeb pan oedd ym mlynyddoedd cynnar y cofnodi.

I gyd fynd â'r data a gyflwynir yn y graffiau isod dangosir hefyd rhai digwyddiadau perthnasol o'r dyddiadur a gofnodwyd o'r un cyfnod.

Eira Cyntaf

Dyma'r dyddiadau cyntaf y gwelodd LL eira yn Eryri ar ddechrau pob gaeaf, gyda phob dyddiad wedi ei drawsnewid, er hwylustod y cyflwyniad graffig, i'r nifer o ddyddiau ar ôl y cyntaf o Fedi. Mae'r duedd i eira ymddangos yn hwyrach wrth i'r cyfnod fynd yn ei flaen yn amlwg. Mae prawf ystadegol yn dangos y byddai patrwm o'r fath yn digwydd ar hap lai nag unwaith mewn mil o weithiau (arwyddocâd ystadegol 0.001%). Gellir damcaniaethu'n ofalus fod hyn yn cydfynd â thystiolaethau eraill am newid ym mhatrymau ein hinsawdd.



Dyma rai o'r nifer o gofnodion dadlennol neu ddiddorol eraill sydd wedi eu nodi yn nyddiadur Llên Natur (www.llennatur.com) yr un pryd â chofnodion LL (neu o fewn ychydig ddyddiau - ei ddyddiadau yntau mewn llythrennau trwm):

21 Hydref 1950 *The anticyclonic weather which began on October 21st brought heavy immigrations from the east of Starlings, Skylarks and Redwings with smaller numbers of Hooded and Carrion Crows, Rooks, Bramblings, Fieldfares and Lapwings. (British Birds, 1951)*

8 Medi 1952 *Wintry conditions prevailing - obliged to have fires the building was so cold (log Ysgol Henblas, TG Walker)*

14 Hydref 1953 *Cyfarfod Diolchgarwch. 6 o wningod yn magle saethu tair. Tegwyn a Eifion yn dosio defaid rhag Fluke ar ôl cinio.* (Dyddiadur J.H. Jones, 'Rhafod, Tynant, Corwen). Roedd Tachwedd a Rhagfyr 1953 yn fwyn iawn ac fe ddilynodd cofnodion lu o adar yn nythu'n anhymhorol. (British Birds, 1954)

2 Tach 1968 *Gwiwerod llwydion yn cyrraedd Llanfairfechan (Warren Martin). A time when unprecedented numbers of vagrant American birds reached Britain and Ireland. Also the largest annual total of monarch butterflies since the species was first described in Britain in 1876* (British Birds, 1969)

16 Hydref 1972 Cyfnod pan gyrhaeddodd sgrechod y coed o'r cyfandir: *"18 over Aberystwyth...29 out to sea W over Ramsey...several groups c27 individuals over Lavernock"*

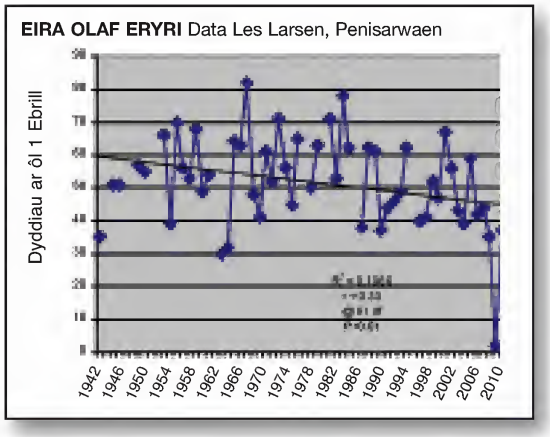
23 Tachwedd 1981 *Tornadoes galore The 23rd of November 1981 was an exceptional day as a very active cold front replaced very mild SWly winds with much colder NWlies as it crossed England and Wales. The front produced heavy rain, hail, severe squalls and 105 tornados, the largest outbreak of tornados in one day ever recorded in the UK.* (www.theweatheroutlook.com)

21 Medi 1982 *gusts of wind measuring up to hurricane force of 80mph..caused huge disruption...power cuts to 4000 homes during the course of a week. People in Meirionnydd and Llŷn hit especially hard, with trees blowing down a key 33,000 volt power line between Maentwrog and Manod...Ferodo factory, two heavy (4' square) crates sucked up in a tornado like gust...caravans turned over at Morfa Bychan...Morfa Conwy a number of people badly injured...roads blocked by fallen trees in Penrhos, Rhydyclafdy, Pencaenewydd and Llanbedrog areas* (Caernarvon & Denbigh Herald, 1 Hydref 1982)

Eira olaf

Oherwydd mai gwybodaeth adolygol ydyw, gwaith anos yw cofnodi "yr olaf" pob amser, boed gwennol olaf y tymor, y gog olaf, neu, yn yr achos hwn, yr eira olaf. Er gwaethaf unrhyw anawsterau, llwyddodd LL i gasglu cyfres gyflawn o gofnodion blynyddol (ag eithrio'r blynyddoedd pan oedd yn gwasanaethu yn y

Llu Awyr yn nechrau'r cyfnod). Yn y graff mae'r data wedi eu trin a'u dosbarthu yn yr un modd a'r graff cyntaf ond i'r dyddiadau gael eu trawsnewid i'r nifer o ddyddiau ar ôl y cyntaf o Ebrill.



Gwelir fod tuedd amlwg i'r eira olaf ddiflannu yn gynt dros y cyfnod dan sylw er nad yw hynny, yn dueddiad mor gryf â thuedd yr eira cyntaf (byddai'r patrwm yn digwydd ar hap unwaith mewn cant o weithiau neu lai (arwyddocâd ystadegol 0.01%), yn hytrach nag unwaith mewn mil). O ystyried yr anawsterau o gasglu'r data "olaf" a'r anhawster o ddarganfod clytyn o eira yn nghanol mynyddoedd Eryri, efallai bod hyn i'w ddisgwyl. Serch hynny llwyddodd LL i oresgyn y broblem i ryw raddau yn fuan yn y cyfnod cofnodi trwy ddarganfod fod yr esgyrn eira yn y gwanwyn yn parhau'n hwy yn yr un llefydd o flwyddyn i flwyddyn (e.e. llecyn a elwir y Ffoes Ddofn) ac nid oedd ond angen cipolwg ar y llecynnau hawdd-eu-gweld hyn i gael data derbyniol. Mae'r ffaith bod data o un llecyn yn sail i'r cofnodion, yn sicrhau cysondeb yn y dull cofnodi o flwyddyn i flwyddyn ac yn cryfhau dibynoldeb y canlyniadau.

Mae'r data ar ddiflaniad cynyddol gynnar yr eira ar Eryri yn cyd fynd â data eraill bod y gwanwyn yn dod yn gynharach, o leia dros gyfran o'r cyfnod dan sylw. Dengys ymchwil i ffenoleg adar yng Nghymru y bu i'r gwybedog brith ddodwy yn gynharach ers dechrau'r 1980au mewn blychau nythu ar dri safle yng Nghymru, dau ohonynt ar gyrion Eryri (Sparks, T.H. et al.: 2002). Enghraifft mwy cyffredinol o faes ffenoleg gwyfynod a gloŷnnod byw yw Burton, J.F. & Sparks, T.H. (2002).

Cyfeiriadau

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Alun Williams

Gwyn Williams

Eryri snow records 1941-2011

Few people have the determination and discipline to build up long term data sets about our natural environment. Les Larsen is one such person; he has kept records of the dates on which snow has arrived and disappeared in Snowdonia from his home in Penisarwaun, near Caernarfon, for the last 70 years. Despite their simplicity, the rigour applied to the recording effort lends credibility to the data which demonstrate that the trend has been for snow to arrive later and disappear sooner on Snowdon over the last seven decades. The records form part of the growing collection of information amassed for the Llên Natur project (**www.llennatur.com**) and can be viewed (in Welsh) at **http://llennatur.com/cy/node/18**

A changing landscape for Greater Horseshoe bats in Pembrokeshire

***BOB HAYCOCK** looks back over the last 30 years at how a breeding colony of Greater Horseshoe bats in mid Pembrokeshire has managed to adapt to a changing environment and alterations to its roost – formerly a stable block, now a hotel and restaurant.*

For a relatively rare animal such as the Greater Horseshoe bat *Rhinolophus ferrumeqinum*, survival depends on the availability of a wide range of roost sites offering different micro-climates during the year – from large buildings with open and accessible, relatively warm lofts in summer for breeding, to cooler structures such as cellars and tunnels when they need them (even in summer) and at other times of the year. Incorporating all these requirements into a major development to upgrade tourist facilities is not an easy task.

Slebech – recollections of the early years

When I arrived in Pembrokeshire in January 1984, to take up the NCC (Nature Conservancy Council - predecessor of the Countryside Council for Wales) post of warden of the Stackpole National Nature Reserve, I soon realised that Greater Horseshoe bats would be an important part of my job. Perhaps I underestimated how much they might become part of my life and how much time would need to be devoted to them over the years to come, especially at one of the key roost sites at Slebech Park. Here there have been immense changes in the environment that could harm the bats. What have we learned, and how are the bats faring?

When a breeding colony was confirmed at Slebech in 1982, it was only the second Greater Horseshoe nursery roost known in Pembrokeshire (and in Wales) at that time, even though a large pile of bat droppings

in the roost – a loft above old stable buildings – suggested that bats must have been there for some time. At the time of its discovery the Greater Horseshoe bat colony was quite small (about 35-45 adults during the summers of the early 1980s), but its significance was immediately realised by the NCC and the site was designated an SSSI. The 1980s were not a particularly good period for Greater Horseshoe bats. Monitoring was indicating that they were in trouble – with numbers at both known roosts falling, and annual recruitment declining.

From the 1990s onwards, however, things changed and we started to see a rise in their numbers. Increased protection measures at key sites like Slebech and Stackpole, helped by an ameliorating climate with generally warmer winters prevailing, played a large part. An additional roost was also discovered near Newport in north Pembrokeshire, a roost that has also been secured due to the keen interest of the owners.

My impression when visiting the Slebech roost in the summer of 1984, with Tom McOwat and others to monitor the bats, was that the building complex was essentially agricultural, but included a few residential flats accommodating estate staff. The buildings, although set in a beautiful and tranquil landscape, were rather jaded and badly in need of refurbishment and repair. The roost loft was only accessible via a trap-door in the ceiling above the landing in one of the flats occupied at the time by Colin Bradley, who had helped discover the bats. A grass and gravel yard next to the main part of the building was separated from a lower terrace yard by a partially vegetated wall. In the lower yard there was a rusty corrugated-roofed sawmill housing logs for the fire, a nearby chicken shed, and a low single storey building with arched entrances, typical of agricultural buildings, housing general farm machinery and equipment. Mature trees appeared to be undermining part of a large three-storey wing of the U-shaped building, housing a former granary.

By day, chickens could be found wandering around the yard; swallows and feral pigeons came and went from the granary building. At night, Greater Horseshoe bats emerged via a small hole at the top of a wooden staircase, allowing them to fly out through large open garage doors – an access route that (like the human loft access in a private flat) was not ideal in the longer term. In winter, some of the horseshoe bats hibernated in vaulted cellars under the granary, although we were not aware of this until the winter of 1990/91.

There were other bats too: Lesser Horseshoes were regularly recorded in small numbers and brown long-eared bats would often be found roosting or flying in the open single-storey machinery building, or in a tall, narrow recess under a clock-tower archway staircase where roosting Lesser Horseshoe bats were also occasionally found. Pipistrelles (only one species known then), although regularly present and quite common, were not especially numerous. After the bats had emerged the immediate environs were generally quiet and on the lower side of the dividing wall, where we parked our vehicles, it was totally

Slebech in 1985 GH bats exitied via open garage doors on left

unlit – apart from the stars and moonlight reflecting on the nearby Eastern Cleddau estuary.

Slebech transformed – a bat hotel?

New bat and human access points were successfully created in an early refurbishment phase at the end of the 1980s/early 1990s. Since around 2000, the building complex has been transformed into a hotel, restaurant and conference facility aided by European Objective 1 funds. The whole area has been re-landscaped, necessitating installation of new bat and human access locations to the nursery roost and construction of a bat chimney intermediate roost as mitigation for the loss of some roosting space. A tunnel with a grilled access has had to be created to enable greater and Lesser Horseshoe bats to gain entrance to the vaulted cellars, as the basement of the granary building is now part of a kitchen/store complex. New gravel and grassed terraces have been constructed, some trees have had to be removed, and a large marquee has been attached to part of the building complex. Slebech is now a much busier and more bustling place.

Trying to accommodate the needs of bats and access for bat workers has not been without its problems, requiring numerous meetings and much correspondence, involving the owners, CCW, Planning Department of Pembrokeshire Coast National Park Authority, numerous architects, and building contractors. To satisfy European Habitats and Species Regulations, and before planning consent could be given for the various phases of the

Slebech in 2011

development, consultants had to produce a number of environmental and wildlife reports, and much independent advice was provided by various bat experts, including Bob Stebbings and Tom McOwat. Some of the work also needed a Welsh Assembly development licence. Over the years there has been much discussion and chewing-over of various designs for bat roosting options, and bat-worker access provision to enable the bats to be monitored. The nursery roost has also been designated a European protected site (forming part of the Pembrokeshire Bat Sites and Bosherston Lakes SAC), adding a further dimension to deliberations.

So what about the bats – how are they faring?

Fortunately a long series of bat count data has been collected from Slebech and the two other Greater Horseshoe nursery roosts in Pembrokeshire. There have been almost annual counts of adults (including use of infra-red beam automatic counters, installed by Peter Andrews, which until recently provided nightly counts of numbers of bats coming and going). In addition the number of births is recorded annually by Tom McOwat.

The Greater Horseshoe bat population at Slebech appears to be reasonably healthy, but its overall growth seems to have slowed down, compared with the other two Pembrokeshire breeding sites. Whether this is a temporary blip or part of a trend, only time will tell. Of course it is easy to forget that there have been other significant changes in the landscape during the last ten years that might also be influencing their ecology and survival.

Changes in the wider environment

Greater Horseshoe bats need access to a patchwork of connected habitats. Knowing this gives conservation bodies extra headaches when providing advice, for example on locations of proposed holiday developments, industrial sites, road schemes, and related infrastructure. Since I last wrote about Greater Horseshoe bats in this magazine (NC 11, pp 14-16), helped by the advent of better bat detectors and improved survey techniques in the digital age, we better understand what conservation measures are required and how best to protect their roosts and habitat. Generally milder winters may also have benefited these animals which, here in Wales, are at the northern edge of their European range.

There have been many changes to the wider environment which could have affected the colony. A conifer plantation is now well established about 2-3 km north-west of Slebech, in an area where rough grassland was thought to be an important bat feeding area (radio-tracking data). The large and somewhat controversial Bluestone holiday campus has been built and is operational about 3.5 km to the east of Slebech. A large gas pipeline has been trenched into the landscape, crossing horseshoe bat flyways and feeding areas. This zone has now more or less healed, and gaps in hedgerows have been replanted. Many of the bats have to cross the A40 road to reach feeding areas. Increased traffic density and speed over the last 30 years may mean that they are more vulnerable at crossing points. Some bats, however, have found it safer to cross via a large culvert. A new A40 by-pass around Robeston Wathen is now almost complete, but has included suitable bat crossing points including additional under-road culverts. Further road scheme developments closer to and west of Slebech are in the

pipeline, subject to funding. There have been, and will probably continue to be, a number of building conversions, some of which are known to be intermediate roosts for horseshoe bats. Mitigation should have been included in the designs, but how successful have they been?

Populations of Pipistrelle bats (including Common and Soprano Pipistrelles) have expanded considerably. Clearly the new warmer roof space, with purpose-built 15mm wide pipistrelle-sized access points behind the guttering (added when the walls were rendered) have been to their liking. A small colony of brown long-eared bats still breeds in the clock tower loft and other lofts adjoining, but discrete from, the Greater Horseshoe roost.

There have been some compromises in the development phases and some roosting sites have been lost, of that there is no doubt. However, on the plus side, currently the numbers of Greater Horseshoe and Pipistrelle bats are significantly higher than before the development phase began and awareness has been raised. The bats have a prominent reference in the Slebech Park website environment page, and in the restaurant the building complex is proclaimed as being one of the premier European sites for bats, which it certainly is!

With potentially new biodiversity targets linked to eco-system services around the corner, perhaps the Greater Horseshoe bats' importance in the landscape and in the local economy will become even more significant. But the recent cold winter and predictions by some forecasters that we may be entering a climatic phase with more like this to come, remind us to stay vigilant. Bat monitoring needs to continue here and at the other two Pembrokeshire roosts if we are to go on learning about how well these bats are adapting to environmental changes.

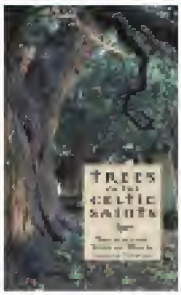
Bob Haycock *was, until recently retiring from the Countryside Council for Wales, a Senior Reserves Manager at Stackpole, Pembrokeshire. He is actively pursuing a number of wildlife interests in the County, is a member of the Pembrokeshire Bat Group, Pembrokeshire Bird Group, a BTO Rep for Pembrokeshire and a Director of 'NATUR' the Welsh Institute of Countryside and Conservation Management. .*

Acknowledgements
Special thanks to Geoffrey and Georgina Philipps, for permission to access the bat roosts at Slebech Park. Tom McOwat and Bob Stebbings have been inspirational over the years. Annie as always provided useful comments, as usual at short notice.

Saga ystlumod Slebech

Mae ystlumod pedol mwyaf yn byw'n hapus mewn gwesty a bwyty crand ym Mharc Slebech yn ne Sir Benfro. Canfuwyd rhyw 35-40 ohonynt yma yn 1982 a hon oedd yr ail glwydfan fagu fwyaf yng Nghymru ar y pryd. Casgliad blinedig o adeiladau oedd yn Slebech yn y 1980au ond fe'u trawsnewidiwyd yn raddol ers 2000..Bu cryn grafu pen a thrafod er mwyn gwarchod yr ystlumod a gwnaed llawer o addasiadau i greu amrywiaeth o lefydd magu, clwydfannau dros dro a mynedfeydd ar eu cyfer. Er yn iach nid yw poblogaeth yr ystlumod pedol mwyaf yn cynyddu cystal ag y mae'n gwneud mewn mannau eraill yn Sir Benfro. Patrwm dros dro efallai, ond wrth gwrs mae'r dirwedd wedi newid mewn ffyrdd eraill dros y ddegawd ddiwethaf – mae coedwig goniffer wedi sefydlu ar laswelltir lle byddent yn bwydo, crëwyd ffyrdd newydd sy'n peri her i ystlumod ac mae Parc y Garreg Las wedi ymddangos. Rhaid oedd cyfaddawdu rhywfaint yn Slebech ac fe gollwyd rhai clwydfannau. Ond mae niferoedd ystlumod pedol yn uwch nawr nag oeddent yn yr 80au. Mae'r ystlumod bach a soprano yn hapus gyda'r toeau cynhesach a'r mynedfeydd 15mm newydd tu ôl i'r gwteri ac mae ystlumod hirglust yn dal i fagu yn y tŵr cloc. Cynyddu hefyd wnaeth ymwybyddiaeth a balchder pobl – mae cyfeiriad at yr ystlumod ar wefan Parc Slebech a'r adeilad yn cael ei frolio yn y bwyty fel un o'r safleoedd Ewropeaidd pennaf ar eu cyfer .

Green **Bookshelf**



Trees of the Celtic Saints: the Ancient Yews of Wales
Andrew Morton
Gwasg Carreg Gwalch 2009
135pp., 38 colour plates
£7.50

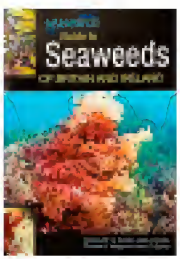
No native British tree, including the oak, inspires more interest and admiration than the churchyard yew. Not only can it grow to a great age, but it looks venerable, often dominating the churchyards in which it grows. And then there is its involvement in pre-Christian and Christian history, myths and legends.

Wales has its fair share of ancient yews and in this book Andrew Morton sets out to catalogue and describe them, having travelled throughout Wales to do so. To follow in his footsteps would be a major undertaking, but with his text in the car or rucksack one can make visits of pilgrimage as and when time allows, much aided by the fact that the 100 sites referred to are arranged geographically into Welsh regions, the text being accompanied by simple maps.

But this book is much more than just a travelogue, it covers in some detail the botany of the yew, trees in pre-Christian and Christian history, yews in Welsh history and legend, liturgical use of yews and other reasons for the planting of yews in Welsh churchyards, all of which makes for fascinating reading. Detailed studies, involving a good deal of scholarship, are included of yews in six churchyards, teasing out in each case details of the history of the village, the church (including what is known, or told, of the saint for which it is named), as well as of the yews themselves. The colour plates are generally of good quality and are well reproduced, but they are all gathered together in a central section whereas it would be preferable for each picture to accompany the appropriate text, which is nowadays a simple task for the printer involving little additional cost.

Previous literature on the subject, which as might be expected is quite substantial, is reviewed in some detail, and sources used for the present study are acknowledged.

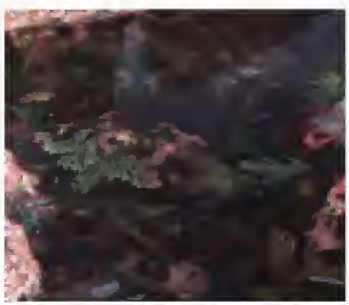
John Good



Seasearch Guide to Seaweeds of Britain and Ireland
Frances Bunker, Juliet Brodie, Christine Maggs and Anne Bunker
Marine Conservation Society
£14.50 + £2.40 p&p from MCS

While many naturalists can put names to the common brown wracks, people often struggle with the diverse range of reds and greens. Although this guide is aimed at divers and others contributing to the Marine Conservation Society's Seasearch projects, it undoubtedly fills a gap in identification literature between the general seashore books and the specialist tomes. There are said to be about 700 species of macroalgae in the seas around Britain and Ireland. Some can only be identified using high powered microscopes and with certain stages in the reproductive cycle. However, this book should allow nearly 200 to be named with the aid only of a hand lens. The guide is well laid out with many excellent and relevant photographs of both whole plants and crucial features. Of particular use are notes on other species each might be confused with. There are also maps showing where each species has been found with indications of how common or scarce they are. Given the ecological importance, not to mention their economic importance, seaweeds deserve to be better recognised by the general community of naturalists. The authors of this book, two of whom live in Pembrokeshire, have produced a reasonably priced guide that many general marine ecologists and coastal naturalists will need to have, as well as the Seasearch volunteers.

Ivor Rees



Jon Moore CALM

Marine matters

Pembrokeshire probably has the most diverse range of marine habitats, species and features of conservation interest of any Welsh county. A number of south-western species just reach Welsh waters here. The long coastline of the county encompasses a complex of rocky islands exposed to the full force of Atlantic swell, sounds with extreme tidal rapids and the great sheltered ria inlet of Milford Haven which has communities found hardly anywhere else round Wales. On top of this, the jewel in the crown of marine conservation in the whole of Wales is undoubtedly the Skomer Marine Nature Reserve. Although formally designated in 1990 under provisions in the Wildlife and Countryside Act 1981, its origins go back to 1968, and it became a Voluntary Marine Reserve in 1976.

Looking back, progress on marine conservation sometimes seems to have been both tangled and glacially slow. I apologise to those who would prefer to be reading here about the natural history of marine wildlife, but with critical stages in the saga approaching this year, discussion of mechanics is unavoidable. After a long period of lobbying and legislative gestation, the next couple of years will show whether the Marine and Coastal Access Act 2009 will be more effective than the 1981 Act. Under the EU Habitats Directive, lines were drawn around areas of Welsh coastal waters designating Special Areas of Conservation, but wrangles continue over how and where to restrain impacts of some fishing methods such as scallop dredging. Things have moved on, so

Mike Alexander

approaches under the new Act are rather different and, dare one say, somewhat more ambitious. The intention is to create a coherent network of protected Marine Conservation Zones covering as wide a range of representative habitats as possible and including locations out to international mid lines or the 200m depth contour.

The part of the overall project managed in Wales only extends to 12 nautical miles from baselines. The remainder of 'Welsh waters' has been divided into two ecologically incoherent zones, a 'Celtic Sea' and an 'Irish Sea' zone, with boundaries between them of no bio-geographical relevance, and separate 'teams' applying different approaches to the task in hand. For Wales, work over more than a year by technical and stakeholder groups should shortly result in actual sites for consultation, followed by recommendations being made to Ministers. The timetable is to make designations in 2012. Very careful thought has gone into both the ecological principles behind the choice of Marine Conservation Zones around Wales and the practicalities of monitoring and enforcement. Practical limitations on resources for enforcement and monitoring are why the number of Welsh MCZs seems likely to be restricted to perhaps just four in the first instant. This presents other challenges in finding locations where good examples of the range of habitats can be included in zones of limited extent, bearing in mind that over 16 habitat categories exist.

The 'Irish Sea' project seems to have done the reverse, placing emphasis first on stakeholder consultations. Their tentative proposals focus on areas that might be of least interest to fisheries, aggregate extraction and energy developers. This is hardly surprising given that the project team lacked a single marine ecologist.

Although the philosophy behind Marine Conservation Zones is different from the direction of earlier measures, there are many lessons to learn from the Skomer MNR. Its achievements owe a great deal to the enthusiasm of the very small team of CCW staff based on the spot in Martinshaven as well as to many volunteers. Success can be measured in the protection given to the special features of the reserve, the scale of outreach to visitors, and the kind of original observations that are only possible at a protected location. For example, by returning year after year to the same photo quadrats, gradual changes to very slow growing colonies of delicate organisms such as sea-fans have been revealed. These and other studies documented in the sequence of annual reports deserve to be better recognised, but like the progress of marine conservation, persistence pays dividends in the long term.

Ivor Rees

Saproxylic Beetles in Wales

Saproxylic beetles are species whose larvae live in timber, decaying wood, wood decay fungi and rot holes in trees. Many of these species feed on fungi or fungal infested timber, but others are predatory, feeding on other saproxylic invertebrates. About 450 species of saproxylic beetles are known from Wales. This is roughly one sixth of all known Welsh beetle species.

Saproxylic Beetle *Thymalus limbatus*

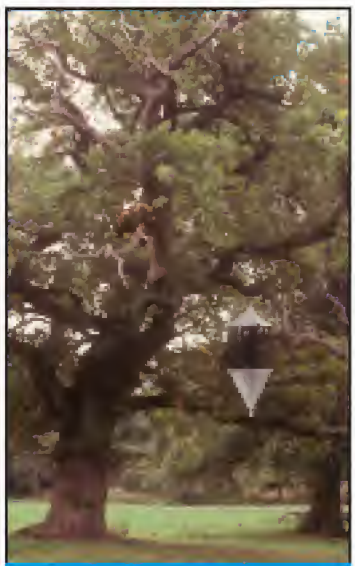
Many species of saproxylic beetle are nationally scarce or rare, particularly those associated with large old trees containing decaying heartwood, especially oak trees. Such trees are predominantly found in medieval parks, pasture woodlands and other non-commercial ancient woodland sites, so are in themselves a scarce natural habitat. The earliest known parkland and pasture woodland sites date from the 11th century, and were originally established as deer parks. These sites usually contained woodland and open grassland. Trees would be pollarded, to remove the branches above the height that could be browsed by deer and cattle. Pollarding promoted a dense growth of foliage and branches which could be used to provide fodder or, if left to grow for longer, timber. Pollarded trees often live longer than unpollarded ones and, given enough time, become hollow. Tree hollows and the wood mould they contain provide the habitats in which many of the rarer saproxylic species live.

Microrhagus pygmaeus

Because the habitats used by the more fastidious saproxylic beetles are scarce, both in space and time, sites with large numbers of mature and over-mature trees and a long historical continuity have the richest saproxylic beetle faunas. These factors are important, since it takes hundreds of years for trees to naturally develop the types of habitats required to support the rarer saproxylic species, and at one time only a few trees may be at the correct stage of development.

Since many saproxylic beetles spend most of their lives as larvae in concealed situations and the adult stage is often short-lived, surveying a site for them requires the use of a variety of trapping techniques. Even with the use of traps, many species will not be captured in one season of trapping. Previous surveys of sites in Wales by Brian Levey and Mark Pavett of the National Museum Wales, with colleagues from Liverpool Museum, have shown that Dinefwr Deer Park, Powis Castle Park and Chirk Castle Park support very rich faunas of saproxylic beetles. Each of these sites has a long historical continuity and contains numbers of ancient trees with suitable habitats. More recent survey work at St Fagans National History Museum shows that even sites containing relatively few mature and over-mature trees can still support a rich fauna of saproxylic beetles, with 71 species recorded there. Seventeen of these are notable or rare species, and some of these are the only known records of the species in Wales.

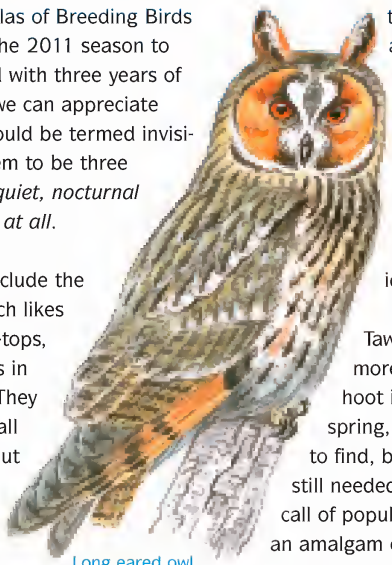
Brian Levey is the Coleoptera Curator, Department of Biodiversity, National Museum Wales.



Canopy interception trap

Invisible birds: A last chance to help fill gaps in the BTO Breeding Birds Atlas

The BTO atlas of Breeding Birds has only the 2011 season to complete, and with three years of data to view we can appreciate which birds could be termed invisible. There seem to be three categories – *quiet, nocturnal* and *not there at all*.



Long eared owl

Quiet birds include the hawfinch, which likes sitting in tree-tops, including yews in churchyards. They have a 'tzik' call like a robin, but this and the curious song are not familiar to most birdwatchers. Once the leaves come out on deciduous trees, the hawfinch really does disappear. We think they are present in far more places than recorded so far.

The nocturnal (and crepuscular) group includes the owls, nightjar and woodcock. Two owl species – the little and the short-eared – are not strictly nocturnal, but numbers seem to be declining for these two anyway. The long-eared is perhaps the most elusive – they hoot at dusk on the edge of upland conifer woods in February and March. Keen observers make a note to seek them out, but usually forget when the time comes. They are easier to find when the young leave the nest, as they have a characteristic hunger call like a squeaky gate. This repeated call helps the adults to locate them. Our first breeding season record in Caernarfonshire for the current Atlas arose last year when a keen naturalist heard an unknown call at night, recorded it on an iPod, then emailed it to an RSPB staffer who identified it!

Tawny Owls are much more widespread and hoot in both autumn and spring, making them easier to find, but more records are still needed. The tuwit-tuwoo call of popular renown is actually an amalgam of the female's kewick call and the male's tremulous hoot.

The nightjar is a summer visitor arriving in late May, and in north Wales is found mainly in cleared areas of forestry; they are invisible by day but fly out at dusk to hunt moths. The males advertise their presence at dusk with a prolonged reeling call. Another crepuscular species is the woodcock, a wading bird which is common as a winter visitor from N Europe. Our breeding birds lie up in woodland during the day, but can be heard when the males emerge at dusk to perform 'roding' flights over the trees. The roding call is a combination of grunts followed by a high-pitched 'pissp', and its purpose is to help the male find females! So far we have only received records of roding woodcock in north Wales from a few sites, including Gwydir and Beddgelert forests. There must be more nightjars and woodcock out there!

The *'not there at all'* category really indicates birds that have declined so much over the last 20-40 years that the few remaining birds are very difficult to find. Lesser spotted woodpecker and willow tit are examples of these, which have suffered considerable declines over most of Britain. The woodpecker also has two unhelpful attributes – it really is small (sparrow-sized) and is also much less noisy than its great spotted cousin. Sunny days in very early spring are the best times to pick up the lesser spot, when it drums and also calls kee-kee-kee.

How you can help: let us have all your records for these invisible birds. We will always need a date and grid reference or other fairly precise location, and we may need to contact you to be certain we have the right bird!

You can email me **geoffkate.gibbs@care4free.net** or phone **01248 681936**. Details of our local Atlas in North Wales can be found on our website **www.northwalesbirdatlas.co.uk**

Geoff Gibbs

Woodcock

Illustrations: ©RSPB Mike Langman

Water vole reintroduction near Llangorse Lake

The water vole *Arvicola terrestris*, immortalised as Ratty in '*Wind in the Willows*', was once a familiar sight on waterways and ponds throughout England and Wales. Sadly, it has suffered a rapid decline in the last 40 years and surveys carried out by the Vincent Wildlife Trust from 1989 to 1998 showed that the species had been lost from almost 90% of the sites where it occurred early in the 20th century. Many remaining populations are now severely fragmented and their survival must be in doubt.

Water vole

The reasons for this decline are complex but certainly involve a combination of loss and fragmentation of habitat, altered riparian management and, perhaps critically, the introduction and spread of the feral American mink *Mustela vison*, an effective predator of water voles.

Consequently, the water vole is a UK BAP Priority species and was afforded full protection under the Wildlife & Countryside Act 1981 (as amended) in April 2008.

Environment Agency Wales (EAW) decided to help re-establish the species by setting up a captive breeding facility at the Cynrig Hatchery near Brecon, and to look for a suitable reintroduction site locally. A site close to Llangorse Lake in Powys was picked following local discussions and assessment of suitability. The area was surveyed in detail to make sure no existing water vole populations were present.

The Llangorse area, like so many in Wales, historically supported water voles. However, the decline in the distribution has been dramatic. There are now very few locations in south-east Wales with positive signs of water voles. A survey in 2007 at the receptor site showed no evidence of water voles, but mink signs were common.

Preparatory work over a two-year period has involved substantial habitat enhancement and creation of new ditch habitat, fencing off new and improved ditches, and tree management to allow light into the improved habitat. Some banked areas were created alongside the lower lying ditches in order to provide refuge areas in flood conditions. Additional habitat was created on higher fields to give further protection during adverse weather conditions.

The first phase of the project was undertaken on farmland to the south-west of Llangorse Lake during the summer of 2009, when 200 water voles were released. This has been supplemented by a further release in June 2010. Most of the released water voles were reared at a specialist centre in Devon but were of Welsh/SW parent stock. Derek Gow has been involved from the conception of this project and has trained key staff regarding the captive breeding of water voles. He has advised and helped source the genetic breeding stock for the project. The captive breeding facility developed at the Cynrig Hatchery has proved very successful and provides voles to top up the population at the receptor site.

A small number of robust voles were released directly into the new habitat but most had to acclimatise in holding pens with food and water for a number of days before enjoying their new surroundings.

Selwyn Eagle, a former EAW employee, lives locally and maintains an interest in the reintroduction work. He also undertakes the important mink control around Llangorse Lake, which has been underway in the area for three years. The site now contains pristine water vole habitat and is free of mink, its main predator, due to the ongoing trapping regime.

Other species such as bats, otters, aquatic invertebrates, birds and even great crested newts, thought to

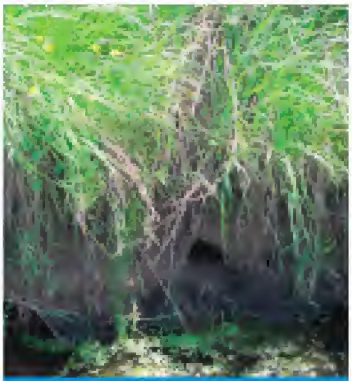
Water vole ditch near Llangorse lake

be present in and around the lake, will also benefit from the Agency's habitat work, which is co-ordinated between the South Wales Biodiversity Team who lead the project (Stuart Craxford, Mike Jenkins) and staff from Cynrig.

The landowner, Mike Jones, is keen on re-establishing water voles on his land and his son John was contracted to do the work to create the network of fenced-off ditches and new ponds and to undertake appropriate tree management. Their welcoming attitude has been vital to the success of the project

The Brecon Beacons National Park Authority (BBNPA) has undertaken some enhancement work on adjacent land which they own near Llangorse Lake, and it is hoped that water voles will establish themselves there as well. Mammal experts from the Countryside Council for Wales have also provided advice on the work.

There's been significant media interest in the project with appearances on BBC Wales and ITV



Water vole burrow

Wales, including Radio Wales' *Country Focus*, and National BBC's *Blue Peter* and *Newsround*. *Springwatch 2011* have expressed an interest in filming the project location this year.

A monitoring programme has been set up with Brecknock Wildlife Trust, and a number of their staff and many volunteers have been trained by Derek Gow to undertake monitoring at the receptor site. It is hoped that as EAW involvement with this project diminishes then the Trust can take over the future monitoring work.

In the summer of 2010 Carola Dallmeier, an MSc student from Glamorgan University, undertook to assess the success of the water vole release. She was introduced to the project by Gareth Ellis at BBNPA and advised by Derek Gow. The National Park own land just to the north of the release site and have been undertaking their own habitat enhancement to provide areas to which the voles can migrate.

Carola's work indicated that water voles were established at the core release sites and migration to adjacent habitat was occurring, with positive signs on the River Llynfi upstream of Llangorse Lake. She surveyed a total of 99 sites in the area, at varying distances from release locations, with positive field signs of water voles found in 56.

This project meets UK and LBAP targets to halt the decline of water voles. It also contributes to actions in the BBNPA Local Biodiversity Action Plan. In addition, the work will contribute to and help deliver the Agency's UK Biodiversity Action Plan responsibilities at an Area level.

Water voles attract media interest

EAW has a key role in enhancing local environments and water-related biodiversity. It aims to minimise the impact on wildlife from its own activities and those that it regulates. It helps wildlife by controlling pollution, regulating abstraction and delivering water-related habitat and species improvements through its flood-risk management work, and other activities including local level collaborative projects.

***Stuart Craxford** is Technical Officer in the Biodiversity Team for Environment Agency Wales.*

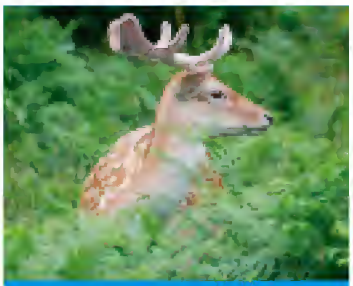
Nature in the balance - managing wild deer in Wales

The Welsh Assembly Government has launched a new strategy for the sustainable management of deer so that Wales benefits from its wild deer population in balance with the natural, social and economic environment. This was needed as an expanding deer population would make it difficult to deliver many of the objectives in the Woodlands for Wales strategy, and objectives for agriculture and the natural environment.

Deer are not new to Wales, with red and roe deer being early inhabitants, but extensive destruction of forests and woodlands resulted in the loss of a number of mammals in Wales including, by the end of the 17th century, our roe deer, and by the late 18th century our red deer.

The more recent, managed increase of forest and woodland cover created a new network of deer habitats, so when rapidly expanding populations of deer reached the border counties a westward advance was inevitable. Although overall numbers are considered to be low, surveys show that deer are widespread in Wales and are affecting the environment.

The impacts made by deer include the grazing of ground and herb layer plants, including naturally regenerating woodland seedlings. This weakens efforts to create sustainable woodlands with a good understorey that is so important for a variety of birds as well as small mammals. Deer also affect commercial woodlands, as evidenced by the impact of fallow deer in the



Fallow deer

Abergele area, undermining efforts to achieve a significant increase in woodland and to deal with climate change.

Specific problems relating to the natural environment have been noted in the Wye Valley, which has both SSSI and SAC designations, with deer impacting on the health of woodlands. This required further action tin managing fallow deer numbers to reduce impacts to an acceptable level. Fencing has also been used to exclude roe deer in the Fiddler's Elbow Reserve near Monmouth, to support natural regeneration of seedlings; however, fencing only moves the problem elsewhere unless deer numbers are also controlled.

Recognising that deer do not keep within boundaries, but live at a landscape scale, the Deer Initiative Partnership set up the Lower Wye Valley Deer Management Group to encourage collaborative deer management across the private and public sectors, building on the existing action that was already being taken on the Assembly Government Woodland Estate by Forestry Commission Wales.

The new strategy will undertake more work involving the wider community, including encouraging reports of deer sightings, of deer involved in road accidents and of wildlife crime involving deer.

The strategy also supports the work of the Invasive Non-native Species Group of the Wales Biodiversity Partnership, identifying the need to address the issue of non-native deer species, especially the prolific Muntjac deer that can have a significant impact on woodland ground flora.

The new strategy was produced by lead organisations in the Deer Initiative Partnership including FCW, CCW, WAG and Deer Initiative staff. Feedback was also received from a wider group of stakeholders before finalising the document. The strategy emphasises that the lead responsibility lies with landowners and land managers, whether owners or tenants. There is an on-going commitment to the partnership approach for the co-ordination, delivery and review of the new framework, believing this is best achieved through a broad range of public, private and voluntary sector stakeholders working together.

If we can all work towards keeping an acceptable density of deer in Wales, we can enjoy their benefits without compromising the environment that we value.

Mark Malins *is Forestry & Environment Support Officer, Forestry Commission Wales.*
mark.malins@forestry.gsi.gov.uk

Hay on Earth

The Greenprint programme at Hay Festival

For five years, the Hay Festival has been managing and mitigating its environmental impact through its Greenprint Programme. Over this period we have focused on our own direct impacts; the impacts of our audience; and the programming of events that will stimulate debate and discussion about key issues.

The plans for 2011 are in full swing as we approach our biggest Festival of the year in May. Our Greenprint Programme is looking very exciting as it combines some big challenges for our management of the Festival as well as a series of debates and discussions covering a wide range of environmental subjects.

For our management of the Festival, the challenge we have set ourselves as part of the Welsh Assembly's Sustainable Development Charter, is to send zero waste to landfill. This – as you can imagine – is quite a task given the range of waste types that are produced; however in 2010 we recycled around 50% of the total waste. We are talking to all our contractors, exhibitors and caterers about the need to reduce the amount of waste they are producing and to streamline the type of waste they are generating to make it easier for us to recycle. Secondly, we are aiming to separate all the food waste generated by the caterers and send it for composting. These two elements will hopefully remove a further 30–40% of the waste stream.

The Greenprint Forum 2011 on Thursday 26 May will have debates on sustainable fisheries and fish species, the impact of speculators on food prices and whether GM foods have a role to play in climate change.

We try to programme environmental debates throughout the 10 days of the Festival, covering as wide a range of subjects as possible. Examples for 2011 include Bjorn Lomborg on climate change economics, wildlife photographer Sue Flood, Rachel Hewitt on cartography and Carol Klein on gardening. We'd love you to join us – the full programme will be available in April.

The Hay on Earth series will be run again in conjunction with Andy Middleton from TYF and we are delighted that the Welsh Assembly are again providing the grants for the winners of the Green Dragon's Den. This year's series focused on finding and developing community-led projects that were delivering sustainable solutions to climate change challenges. After an open competition, each day will culminate in a 'Green Dragon's Den' where the public and a panel of experts will vote for the best project. The winning projects will receive £10,000 from the Welsh Assembly Government.

Dragon's Den winners in 2009 were SEED Homes with a project to build low carbon homes from Welsh materials; B-Bug, with an electric vehicle visitor transport project; Green Valleys for their renewable energy project; and the Mid Wales Food & Land Trust for their School's Farmers Market Project.

We look forward to seeing you all at Hay Festival 2011, 26 May to 5 June.

***Andy Fryers**, Greenprint Director*

Natur Cymru *will be taking part in the Hay Festival. The only committed event at the moment is the prize giving for the 'Inspired by Nature' writing competition. Gillian Clarke, the National Poet for Wales, will present the £1,000 of prizes to the 2 winners at 3 pm, Tuesday 31st May on the RSPB stand. Please come along if you are in the area.*

***Natur Cymru* Stop Press**

At the last moment before going to print, we heard some exciting news. *Nature in Wales*, the quarterly journal of the West Wales Field Society and predecessor of Natur Cymru, is now available online. The National Library of Wales has been working hard to digitise every edition of the journal, which ran from 1955 to 1987. This is an invaluable resource for anyone seriously studying changes, patterns and trends in the natural world. Copies of the journals are held in libraries and amongst private collections but from 28 February they are available to anyone in the world with access to the internet. You can access the journals here **http://welshjournals.llgc.org.uk/browse/listissues/llgc-id:1220475** or via the link in the Natur Cymru blog **http://naturcymru.blogspot.com/2011/03/prequel-to-natur-cymru.html**

Gwobr yng ngwobrau Lantra i aelod o NATUR

Fe ddaeth y Nadolig ychydig yn gynnar eleni i Iestyn Thomas, Aelod NATUR, pan enillodd y gil wobr yn ei gategori yng Ngwobrau Dysgwr y Flwyddyn 2010 yn y categori Tir gan Lantra ym mis Tachwedd 2010. Mae'r gwobrau mawreddog hyn yn dathlu cyflawniadau pobl sy'n gweithio'n galed yn y diwydiannau amgylcheddol a thir yng Nghymru.

Cafodd Iestyn, sy'n dod o Cegidfa, Y Trallwng, ei enwebu ar gyfer y wobr gan NATUR. Roedd Iestyn yn un o aelodau gwreiddiol NATUR. Mae Iestyn yn frwdfrydig iawn am Gymru a'r dreftadaeth naturiol a diwylliannol sy'n ffurfio'r amgylchedd y mae wedi ei fagu ynddi ac y mae wedi dewis gweithio ynddi. Mae ei frwdfrydedd wedi ei arwain at swyddi sy'n golygu gweithio efo pobl sy'n byw ac yn gweithio ar y tir, neu i drosglwyddo ei wybodaeth a'i angerdd i eraill: ei swydd bresennol yw Swyddog Prosiect Ymgysylltiad Amgylcheddol efo'r Ymddiriedolaeth Genedlaethol yn Ninefwr.

Dywedodd Iestyn: "Mae gallu galw awyr agored ardderchog Cymru'n swyddfa i mi wedi rhoi'r symbyliad i mi barhau i fod â diddordeb ac i gael fy nghyffroi a'm hysgogi i ddysgu."

Cafodd Iestyn ei gyflwyno â'i fedal fel Dysgwr Gydol Oes yn y categori Tir gan gan Roger Williams, AS Brycheiniog a Maesyfed a llefarydd amaeth a materion gwledig. Meddai: "Mae'n bleser cefnogi'r gwobrau hyn, a drefnwyd gan Lantra, a dathlu llwyddiannau'r enillwyr hyn heddiw."

Mae NATUR yn sefydliad proffesiynol ar gyfer pobl sy'n rheoli, diogelu a hyrwyddo amgylchedd byw a diwylliannol tir a môr ac yn rhoi i aelodau:

- Statws proffesiynol: fe gydnabyddir aelodaeth NATUR yn safon gyffredin gan bob un o'r cyflogwyr mawr yng Nghymru
- Adnoddau i hyrwyddo datblygiad gyrfa: mentoriaeth a chefnogaeth
- Mynediad am ddim i ddigwyddiadau NATUR a disgownt ar gyrsiau hyfforddi proffesiynol gyda'n partneriaid sy'n ddarparwyr hyfforddiant
- Cyfleoedd i rannu profiadau a sgiliau ag eraill.

NATUR is the professional institute for all those who manage, conserve and promote the living and cultural environment of land and sea in Wales, and offers:

- Professional status: membership of NATUR is recognised as a common standard by all the major employers in Wales
- Resources to promote career development: mentoring and support
- Free entry to NATUR events and discounts on professional training courses with our partner training providers
- Opportunities to share experiences and skills with others.

Am fwy o wybodaeth cysyllt â/
For more information contact:
Marie Madigan, **07837 419995**
marie@natur.eu.com

Prize at Lantra awards for NATUR member

Christmas came a little early for NATUR Member Iestyn Thomas when he was awarded the runner-up prize in his category at the 2010 Lantra Land-based Learner of the Year Awards in November 2010. The prestigious awards celebrate the achievements of people working hard in the environmental and land-based industries in Wales.

Iestyn, from Guilsfield, Welshpool, was nominated for the award by NATUR. One of the original members of the Institute, he is passionate about Wales and the natural and cultural heritage that forms the environment he has grown up in and has chosen to work in. His enthusiasm has led him to posts that involve working with people who live and work the land, or passing on his knowledge and keeness to others: his current job is Environmental Engagement Project Officer with the National Trust in Dinefwr.

Iestyn said: "Being able to call the great outdoors of Wales my office has given me the drive to continue to be interested, excited and motivated to learn."

Iestyn was presented with his award in the Life-long Land-based Learner category by the MP for Brecon and Radnor and spokesman for agriculture and rural affairs, Roger Williams, who said: "I'm delighted to support these awards, organised by Lantra, and to celebrate the achievements demonstrated here today."

Training with the Wildlife Trust of South and West Wales

The Wildlife Trust of South and West Wales (WTSWW) has many objectives designed to ensure that as an organisation we do everything we can for wildlife and wildlife habitats. This is normally achieved through managing our nature reserves, of which WTSWW has 85, covering more than 1700ha.

An important aspect of WTSWW's work, however, is not directly to do with wildlife and more to do with people's safe and responsible enjoyment of it – indeed 'inspiring people about the natural world' is one of our objectives.

The reason why this is so important to us is because the more people who know about the wonders of wildlife, the greater the chance we all have of protecting it or creating more habitats for it. For WTSWW, inspiring people often involves promoting access on reserves or through our outreach education programme in schools and universities, as well as through our campaigns, information leaflets and magazines. However, this year WTSWW will be increasing its service to people and wildlife by running a series of wildlife training courses at its Parc Slip Visitor Centre, Bridgend. The courses will cover a range of topics – from how to identify Welsh bryophytes and map important habitats, to how to survey for reptiles and small mammals.

Each course will be led by a leading expert in the field and will be designed to allow wildlife enthusiasts to take their existing field skills to the next level, enabling them to take part in scientific monitoring programmes and surveys.

In total, seven training courses have been organised from March to September 2011. Each course covers a full day and will cost £60.00. Class sizes have been kept small to ensure as much one-to-one tuition as possible, and therefore pre-booking is essential.

In addition to training courses, WTSWW has also teamed up with the National Museum Wales to run a one-day conference at the museum in Cardiff called *Unknown Wales*. The conference will be opened by naturalist and television presenter Iolo Williams, and will look at the wonders of our wildlife in Wales, from our molluscs and marine life to our spectacular seabird colonies. In addition to talks, special Welsh Wildlife exhibitions will be put on by the museum to allow people to get a closer insight into our vast array of species and habitats. The conference is free to all, and will take place on the 23rd of July 2011.

For more information on training courses or the *Unknown Wales* wildlife conference please contact:

Robert Jones Parry
Conservation Manager
Wildlife Trust of South and West Wales
r.parry@welshwildlife.org
01656 724100
www.welshwildlife.org

For bookings for the Unknown Wales *wildlife conference please contact:*
029 2057 3148

WTSWW

Reptile surveying with WTSWW

Hysbysfwrdd / Noticeboard

If you would like your wildlife event to feature on these pages please contact us on 01248 387373 or email info@naturcymru.org.uk (entries may be edited). Please mention Natur Cymru if you attend any of these events.

School of Education and Lifelong Learning, Aberystwyth

COURSES

25-27 Mar *Identifying Mosses, Liverworts & Lichens* 9am-4pm, CAT, Machynlleth

Wednesdays from 30 Mar *Introduction to Geology* 10am-2pm, Aberystwyth University

20-22 May *Diversity of Invertebrates in West Wales* 9am-4pm, CAT, Machynlleth

Fees: £75 (£65 concessions)

01970 621580 learning@aber.ac.uk www.aber.ac.uk/sell/courses/lllearn/science/index.html

British Lichen Society/Field Studies Centres

LICHEN COURSES

27 Aug with tutors Pat Wolseley and Robin Crump. FSC Orielton, Pembs.

0845 3307372 enquiries.or@field-studies-council.org

21 May & 2 Aug with Ivan Pedley. FSC Preston Montford, Shropshire.

0845 3307378 enquiries.pm@field-studies-council.org

Busybees

COURSES

14-15 May Growing Vegetables Successfully

27 Mar, 2 Apr, 7 May, 20 May Introduction to Beekeeping

3 Pen y Bonc, Cyttir Lane, Bangor, Gwynedd, LL57 4DB.

www.foodskillsforall.co.uk busybees@cooptel.net 01248 361 576

Fenn's Whixall & Bettisfield Mosses

FREE EVENTS

8 & 9 May *Birds of the Mosses Walk* 2pm with Pete Bowyer, Natural England, Estelle Hughes & Eric Marsh

15 May *Meres & Mosses Festival* 10am-4pm. Info Lisa Barlow 01743 284280 or **lisab@shropshirewildlifetrust.org.uk** No need to book.

22 May *Amphibian & Reptile Hunt* 9am with Pete Bowyer & Robert Bleakley.

5 Jun *Marvellous Moths of the Mosses Walk* 2pm with Pete Boardman.

11 Jun *Water Vole Workshop* 2pm with Malcolm Monie.

10 Jul *Dazzling Dragonflies & Damselflies* Walk 2pm with Emma Broad.

Booking essential unless otherwise stated.

Paul Huxley **01948 880362 paul.huxley@naturalengland.org.uk**

Volunteer Practical Group meets 2nd Sun & 4th Thurs of each month. Call Pete Bowyer **0300 060 0269 peter.bowyer@naturalengland.org.uk**

Ffestiniog & Welsh Highland Railways

SPRING GALA

Events at Tan Y Bwlch Station, Snowdonia

26-28 Apr *"Green" activities – come and meet* Natur Cymru *with a walk through the woods*

22-25 Apr *Children's activities & craft stalls for adults*

29 Apr-2 May Railway enthusiasts activities/Heritage events/craft stalls

Belinda Wain belinda.wain@festrail.co.uk 01766 516073 or 0780 792 9086

North East Wales Wildlife

COURSES

At Rhydymwyn Valley Nature Reserve

26 Mar *Beginners Bird Course* 10am-4pm, £15

7 May *Intermediate Bird Course* 10am-4pm, £15 (£25 for Beginner & Intermediate when booked together).

1-2 Apr *Advanced Amphibian Course* 11am-11pm & 9am-4pm. Lunches and one evening meal provided. £50 Volunteers / Students / NEWW Members. £250 Conservation Organisations / Consultants / non NEWW Members

9 Apr *Wildlife Gardening Fair* 11am-3pm

19 May *Butterfly Course* 10am-4pm. Fee TBC.

24 May Reptile Ramble 9.30am-12.30pm. Free.

Booking essential for all these courses. **01352 742115** or **admin@newwildlife.org.uk**

RSPB

FIELD OUTINGS

8 May *Plas Tan Y Bwlch, Maentwrog & RSPB Glaslyn.* 10.30am, Plas Tan y Bwlch Car Park (SH 652403), Jon Clarke **01492 545984**

4 Jun *South Stack & Cemlyn Bay, Anglesey.* 10am, South Stack Car Park, Anglesey (SH 211818), Ann Peacock **01492 593741**

18 Jun *Nightjars - Gwaith Powdwr, Nr Penrhyndeudraeth.* 8.30pm, North Wales Wildlife Trust Nature Reserve (SH 621389), John Beagan **01492 530683/531409**

24 Jul *Lake Vyrnwy, Llanwddyn.* 10.30am at Hide/Cafe at Lake (SJ 018189), Jon Clarke **01492 545984**

Wildlife Trusts Wales

The Wildlife Trusts offer a huge number of events and courses all over Wales. Contact them for a full programme.

Brecknock
www.brecknockwildlifetrust.org.uk 01874 625 708

Gwent
www.gwentwildlife.org 01600 740600

Montgomeryshire
www.montwt.co.uk 01938 555654

North Wales
01248 351541 frankiehogan@wildlifetrustswales.org

Radnorshire
www.radnorshirewildlifetrust.org.uk 01597 823298

South & West Wales

30 Apr *Spider Ecology & Identification* 9.30am—3.30pm. Tutor Mark Winder

28 May *Small Mammal Survey Techniques* 9.30am—3.30pm. Tutor Dr Rob Strachan

11 Jun *Reptile Ecology & Survey Skills* 9.30am—3.30pm. Tutor Dr Rhys Jones

2 Jul *Vascular Plant Identification* 9.30am—3.30pm. Tutor Julian Woodman

www.welshwildlife.org 01656 726980 info@welshwildlife.org

Diolch am y lluniau i / For illustrations, thanks to:
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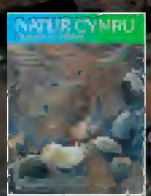

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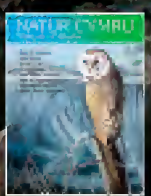

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